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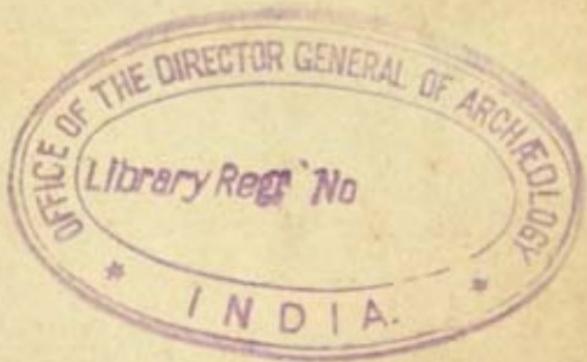
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THE
JOURNAL
OF THE
ROYAL GEOGRAPHICAL SOCIETY.

VOLUME THE TWENTY-NINTH.

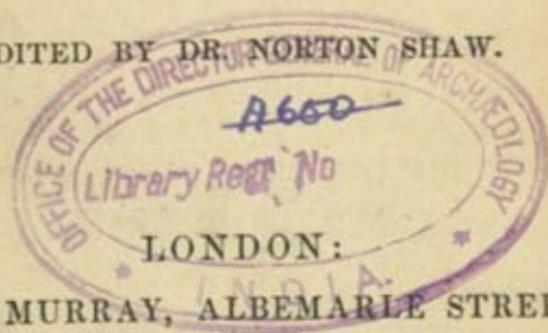
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910.5
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1859.

EDITED BY DR. NORTON SHAW.



JOHN MURRAY, ALBEMARLE STREET.

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Royal Geographical Society,

1859.

REPORT OF THE COUNCIL,

READ AT THE ANNIVERSARY MEETING ON THE 23RD MAY.

THE Council have again to congratulate the Society upon a largely increased list of Fellows, evidencing, as they believe, the warm interest taken by the Public in the advancement of Geographical Science.

Members.—Ordinary, Honorary, and Corresponding.—Since the last Anniversary 132 Fellows have been elected, and, upon the recommendation of the Council, 1 Corresponding Member—Colonel J. A. Hazelius, Chief of the Topographical Corps of Sweden. During the same period the Society has had to lament the loss of 33 Fellows, and of 3 Honorary Members, viz., General Pelet of France, Archduke John of Austria, and the Baron Alexander von Humboldt.

The Society now consists of 1180 Fellows, and 57 Honorary and Corresponding Members.

Finances.—The balance-sheet annexed to this Report shows, as above indicated, a progressive increase of receipt, and affords good proof of the sound financial position of the Society; the stability of which is farther assured by the addition of 500*l.* to its Permanent Fund, now amounting to 3500*l.* New 3 per Cents.

Publications.—The 28th volume of the Society's Journal, containing many valuable papers, with illustrative maps, is now in the press, and will be published in a few days.

The 2nd Volume of the 'Proceedings' has been completed during the past year, and Numbers 1 and 2 of the third volume

have been duly circulated. Both these publications, edited by Dr. Shaw, are presented free to the Fellows, also to the Honorary and Corresponding Members, and to upwards of 100 public institutions at home and abroad. The recent additions to this list are the Topographical Dépôt of the War Department, the Imperial Geographical Institute of Vienna, the State Libraries of New York and Massachusetts, the Library of Yale College, and the University of Chile; also, for the 'Proceedings,' the Post Office Library and Literary Association, the Radcliffe Observatory at Oxford, and the Philosophical Institute of South Australia.

Map-rooms.—The accessions to this department since the last Anniversary consist of 2174 maps and charts, all of which have been mounted on the establishment and arranged in due geographical order. The facility of access to these important documents has been largely tested during the past year by statesmen and travellers, also for general purposes of scientific research, and the collection of data for geographical works in course of publication. Among other valuable acquisitions, the following may be specially noticed:—Topographical Atlas of Switzerland, by General Dufour, presented by the Federal Council; Ordnance Maps of England and Wales, Scotland and Ireland; Charts by the Hydrographic Department of the Admiralty, and by the French Dépôt de la Marine; Government Maps of Austria, Belgium, Sardinia, Saxony, Sweden and Norway; Atlas of Egypt, by the Dépôt de la Guerre, presented by Robert Stephenson, M.P.; Atlases to date of Fullarton, Blackie, Black, and the Supplemental Part I. to Johnston's Royal Atlas; and Laurie's Chart of the World and the North Atlantic, by A. G. Findlay. Maps of Sweden, by H. R. H. the Crown Prince, Honorary Member of the Society; Turkey, showing the railroads, by Sir Macdonald Stephenson; Europe, England, and Wales, by E. Stanford; the Bay and Harbour of Jeddo, and the Yang-tse-Keang, from Nankin to Hankow, MS., by Captain Sherard Osborn, R.N. A valuable collection of Chinese maps, presented by W. Lockhart; the rivers Paraná, Paraguay, and others, in 15 sheets, by Captain T. J. Page, U.S. Navy; Patagonia, in 2 sheets, MS., by E. J. Jones; also various MS. maps from the expeditions under Livingstone, Palliser, Burton and Speke, and Gregory.

Library.—The improvements in this Department, to which reference was made in the last Council Report, have been continued, and in addition to 600 books and pamphlets presented to the Society during the past year, the Library has been enriched by the purchase of 300 volumes of recent geographical works.

The following are among the latest acquisitions:—Logan's 'Report of the Progress of the Geological Survey in Canada'; Fortune's 'Residence among the Chinese, 1853-6'; Sotheby's 'Principia Typographica'; the Swedish 'Topografiska och Statistiska Uppgifter om Upsala Län'; 'Geological Papers on Western India'; Ellis's 'Madagascar and Polynesian Researches'; Loftus's 'Chaldæa and Susiana'; Dunant's 'Tunis'; 'Relations des Jésuites' in Canada; Murchison's 'Siluria,' 3rd edition; Helmersen's 'Beiträge zur Kenntniss des Russischen Reiches'; Hitchcock's 'Ichnology of New England'; 'Reports of Explorations and Surveys for a Railroad from the Mississippi to the Pacific'; 'Report of U. S. Coast Survey'; 'U. S. Army Meteorological Register' for 28 years; 'Colonial History of the State of New York'; Emory's 'United States and Mexican Boundary Survey'; Smyth's 'Teneriffe'; 'Memorie della Reale Academia Ercolanese'; Kupffer's 'Annales de l'Observatoire Physique Central de Russie'; 'Mercantile Marine Magazine'; Transactions of the Universities of Christiania, Kiel, and Chile; of the Geographical Societies of Bombay, Berlin, Darmstadt, New York, Paris, St. Petersburg, and Vienna; of the Canadian, Franklin, Smithsonian, and Lombardo-Venetian Institutions; of the Royal Society of Northern Antiquaries of Denmark; of the Geological Institute of Vienna; also of the Academies of Science of Berlin, Copenhagen, Madrid, Munich, Paris, St. Petersburg, Stockholm, and Vienna.

Expeditions.—The 'Proceedings' of the Society contain reports of various communications received from the expeditions under Dr. Livingstone, Captains Burton and Speke, and Captain Palliser, also from several exploring parties in Australia. It will be unnecessary, therefore, on the present occasion to do more than refer to such record.

Education.—Dr. Shaw has again assisted in the examination of candidates for Lectureships in Geography; and has received, as on

former occasions, the thanks of the Committee of Privy Council on Education for his services.

Royal Premium.—The Founder's, or King William Gold Medal has been awarded to Captain Richard F. Burton, for his various exploratory enterprises, and especially for his recent perilous expedition, in company with Captain J. H. Speke, to the great lakes in Eastern Africa; and the Patron's, or Victoria Gold Medal, to Captain John Palliser, for the valuable results of his explorations in British North America and the Rocky Mountains.

The Council have also awarded to Mr. J. McDougall Stuart a Gold Watch, of the value of Twenty-five Guineas, with a suitable inscription, for his discovery of large tracts of pasture-land in South and Central Australia.

House.—The Fellows are still indebted to the authorities of the University of London and the Royal Society for the use of their spacious Hall at the evening meetings; but application has been made to the First Lord of the Treasury by the President and Council, urging the hope of the memorialists that, in the event of the erection of buildings for public purposes in Burlington Gardens, Her Majesty's Government will favourably entertain their petition that one of such buildings, or sufficient apartments for the various and important functions of this Society, may be accorded to them.

The Council are happy to be enabled to record on the present occasion, as has already been announced from the Presidential Chair, that Her Majesty, our Royal Patron, has been graciously pleased to grant to the Society a Charter of Incorporation, by virtue of which, as well as by its approved usefulness, it now takes rank among the leading Scientific Institutions of the land.

BALANCE-SHEET FOR THE YEAR 1858.

Receipts.

Expenditure.

Audited, and found correct.
15, Whitehall Place, 26t

THOS. H. BROOKING,
E. OSBORNE SMITH,
THOS. LEE,
J. WORTHINGTON,

ed, and found correct.
55, Whitehall Place, 26th April, 1859.

ESTATE FOR THE YEAR 1859.

Receipts.

Expenditure.

	£.	s.	d.	£.	s.	d.
Annual Subscriptions .....	..	..	..	1390	0	0
Life Compositions .....	..	..	..	400	0	0*
Entrance Fees .....	..	..	..	300	0	0
Arrears of Subscriptions .....	..	..	..	50	0	0
Sale of Publications .....	..	..	..	150	0	0
Royal Premium Grant .....	..	..	..	52	10	0
Government Annual Grant .....	..	..	..	500	0	0
Dividends on Stock .....	..	..	..	100	0	0
Cash Balance, 1st January, 1858 .....	..	..	..	535	8	5
Journal and Proceedings .....	..	..	..	..	..	..
Salaries .....	..	..	..	..	..	..
Rent, Wages, Lights, and Firing .....	..	..	..	..	..	..
Library and Map Rooms .....	..	..	..	..	..	..
East African Expedition .....	..	..	..	..	..	..
Royal Premium Awards .....	..	..	..	..	..	..
Office Expenses .....	..	..	..	..	..	..
Charter of Incorporation .....	..	..	..	..	..	..
Sundries for Balance .....	..	..	..	..	..	..
	£ 3387	18	5	£ 3387	18	5

By Order of Council.

NORTON SHAW.

Library Regulations.

I. The Library will be open every day in the week (Sundays excepted) from *Eleven* in the morning to *Five* in the afternoon,* except on New-Year's Day, Good Friday to Easter Monday inclusive, and Christmas week, and it will be closed one month in the year, in order to be thoroughly cleaned, viz. from the first to the last day of September.

II. Every Fellow of the Society is entitled (*subject to the Rules*) to borrow as many as four volumes at one time.

Exceptions :—

1. Dictionaries, Encyclopedias, and other works of reference and cost, Minute Books, Manuscripts, Atlases, Books and Illustrations in loose sheets, Drawings, Prints, and unbound Numbers of Periodical Works, *unless with the special written order of the President.*
2. Maps or Charts, *unless by special sanction of the President and Council.*
3. New Works before the expiration of a month after reception.

III. The title of every Book, Pamphlet, Map, or Work of any kind lent, shall first be entered in the Library-register, with the borrower's signature, or accompanied by a separate note in his hand.

IV. No work of any kind can be retained longer than one month; but at the expiration of that period, or sooner, the same must be returned free of expense, and may then, upon *re-entry*, be again borrowed, provided that no application shall have been made in the mean time by any other Fellow.

V. In all cases a list of the Books, &c., or other property of the Society, in the possession of any Fellow, shall be sent in to the Secretary *on or before the 1st of July in each year.*

VI. In every case of loss or damage to any volume, or other property of the Society, the borrower shall make good the same.

VII. No stranger can be admitted to the Library except by the introduction of a Fellow, whose name, together with that of the Visitor, shall be inserted in a book kept for that purpose.

VIII. Fellows transgressing any of the above Regulations will be reported by the Secretary to the Council, who will take such steps as the case may require.

By Order of the Council,

NORTON SHAW.

* On Saturday the Library is closed at 3 p.m.

ROYAL GEOGRAPHICAL SOCIETY.

Patron.

THE QUEEN.

Vice-Patron.

H. R. H. PRINCE ALBERT.

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(ELECTED 23RD MAY, 1859.)

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St. Petersburg and Vienna; of the Imp. Geol. Inst. of Vienna, and
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(28)

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		ZIEGLER, M. J. M. . Winterthur

(29)

F E L L O W S.

(To APRIL 20, 1860.)

N.B.—*Those having * preceding their names have compounded for life.
Those having † have requested to be placed on the list as abroad.*

Year of Election.	
1830	Aberdeen, George, Earl of, K.G., K.T., M.A., F.R.S. <i>Argyll-house, Argyll-st., W.; and Haddo-house, Aberdeen.</i>
1855	Acland, Prof. Henry Wentworth, M.D. <i>Oxford.</i>
1853	Acland, Sir Peregrine Palmer F. P., Bart. <i>Fairfield, Somerset.</i>
1830	*Acland, Sir Thomas Dyke, Bart., F.R.S. <i>Waterloo-hotel, Jermyn-street, S.W.; and Killerton, Exeter, Devon.</i>
1860	Agnew, Sir Andrew, Bart., M.P. <i>21, Upper Grosvenor-street, W.; and Loch-nae Castle, Wigtonshire.</i>
1859	Ainslie, Col. Francis H. <i>Junior United Service Club, S.W.; and Burlington Chambers, 180, Piccadilly, W.</i>
1830	*Ainsworth, W. Francis, Esq., F.S.A. <i>Ravenscourt-villa, New-rd., Hammersmith, W.</i>
1857	Airey, John Moore, Esq.
1859	Airlie, David Graham, Earl of. <i>27, Berkeley-square, W.</i>
1860	Atchison, David, Esq. <i>Parthenon Club, S.W.</i>
1830	*Albemarle, George Thomas, Earl of. <i>36, Great Cumberland-place, W.; Quiddenham-hall, Larlingford, Norfolk; and Elvedon-hall, Suffolk.</i>
1834	*Alcock, Thomas, Esq., M.P. <i>Kingswood-warren, near Epsom, Surrey.</i>
1838	*Aldam, William, Esq. <i>Frickley-hall, near Doncaster.</i>
1857	Aldrich, Commander Robert D., R.N. <i>H.M.S. 'Monarch,' Sheerness.</i>
1830	Alexander, Colonel Sir Jas. Ed., K.I.S., F.R.A.S., etc., 14th Regt. <i>United Service Club, S.W.; and Fernsby, Ireland.</i>
1857	Alexander, M. Genl., R.A. <i>Blackheath-park, S.E.</i>
1855	Alger, John, Esq. <i>16, Oakley-square, N.W.</i>
1857	Allan, George W., Esq. <i>Toronto, Canada.</i>
1858	Allan, Jas., Esq. <i>122, Leadenhall-street, E.C.</i>
1835	20*Allen, Capt. Wm., R.N., F.R.S. <i>Athenaeum Club, S.W.; and 7, Russell-street, Bath.</i>
1859	Alsager, Thos. H., Esq. <i>Reform Club, S.W.; and Chislehurst, Kent.</i>
1859	Ancell, Henry, Esq. <i>3, Norfolk-crescent, Hyde-park, W.</i>
1854	Ancona, J. S., Esq. <i>8, John-street, Adelphi, W.C.</i>
1856	*Andrew, William P., Esq. <i>26, Montagu-square, W.</i>
1853	Ansted, Prof. D. T., M.A., F.R.S., etc. <i>Athenaeum Club, S.W.; and Bonair St., Martin, Guernsey.</i>
1857	Anstruther, Lt.-Col. Philip, C.B. <i>Madras Artillery, 1, Chapel-st., Grosvenor-place, S.W.</i>

Year of Election.	
1830	*Antrobus, Sir Edmund, Bart. 146, Piccadilly, W.; Lower Cheam, Epsom, Surrey; and Amesbury, Wilts.
1837	Arbuthnot, Coutts T., Esq.
1858	*Arbuthnot, George, Esq. 23, Hyde-park-gardens, W.
1860	30 Archer, W. H. D., of Tasmania. 32, Duke-street, St. James's, S.W.
1855	*Arden, Richard Edward, Esq. Sunbury-park, Middlesex, S.W.
1837	Armstrong, Alexander, Esq., M.D., R.N., Deputy Inspector-General Royal Naval Hospital, Malta. Junior United Service Club, S.W.
1830	*Arrowsmith, John, Esq., F.R.A.S. 10, Soho-square, W.
1839	Ashburton, William Bingham; Lord. Bath House, Piccadilly, W.; and The Grange, Alresford, Hants.
1856	Ashwell, the Rev. Arthur Rawson, M.A., Principal of Oxf. Dioc. Training College. The College, Culham, Oxon.
1853	*Ashwell, James, Esq., M.A., F.G.S.
1851	Astley, Francis D. P., Esq., M.R.I. 67, Eaton-square, S.W.
1830	*Atkins, John Pelly, Esq., F.S.A. Halsted-house, near Sevenoaks.
1853	Atkinson, Thomas W., Esq. Hawk-cottage, Old Brompton, S.W.
1860	40 Attwell, Professor Henry. Barnes, S.W.
1839	Attwood, Matthias Wolverley, Esq. 27, Gracechurch-street, E.C.
1859	Austen, Capt. H. H. Godwin, 24th Foot. Junior United Service Club, S.W. and Chilworth Manor, Guilford, Surrey.
1854	Ayrton, Acton S., Esq., M.P. 24, Grafton-street, Bond-street, W.
1845	*Ayrton, Frederick, Esq. Egypt.
1857	Aytoun, R. Sinclair, Esq. Inchdairnie, Fife.
1836	*Back, Br. Adm. Sir Geo., D.C.L., F.R.S. 109, Gloucester-place, Portman-sq., W.
1859	Baikie, Robert, Esq., M.D. Oriental Club, W.
1855	Baikie, Wm. Balfour, Esq., M.D., R.N. Niger Expedition. Brunswick-cottage, Forton-road, Gosport.
1859	Bailey, L. C., Esq., R.N. Topographical Department, New-street, Spring-gardens, S.W.
1834	50* Baillie, David, Esq., F.R.S. 14, Belgrave-square, S.W.; and Hill-park, Surrey.
1857	Baillie, Capt. John, 26th Bengal Native Infantry. 14, St. James's-square, S.W.
1830	*Baily, Arthur, Esq., F.R.A.S. Harefield, Southampton.
1857	†Baines, Thomas, Esq. Livingstone Expedition; and 14, Union-street, Lynn Regis.
1855	†Baker, Capt. Wm. T., 85th Regt. Graham Town, South Africa; and 31, Grosvenor-place, Bath.
1847	Balfour, Lieut.-Colonel George, M.A. East Indies.
1853	Balfour, John C. B., Esq. New South Wales; and Colinton, Moreton Bay.
1860	Ball, John, Esq. 18, Park-street, Westminster, S.W.
1852	Bancroft, Capt. W. C., 16th Regt. Aide de Camp and Military Sec., King's House, Jamaica; M'Gregor and Co., Charles-street, S.W.
1858	Bannerman, Sir Alexander, Bart. 24, Grafton-street, Bond-street, W.; and Crimondgate, Aberdeenshire.

Year of
Election.

- 1840 60*Barclay, Arthur Kett, Esq., F.R.S. *Park-street, Southwark, S.E.; and Bury-hill, Dorking, Surrey.*
 1852 Barclay, David, Esq. *Eastwick-park, Surrey.*
 1838 Baring, Rt. Hon. Sir Francis T., Bart., M.P., F.R.S. *Stratton-park, Andover, Hants.*
 1858 Baring, The Hon. Francis. 16, *St. James's-square, S.W.*
 1835 *Baring, John, Esq.
 1844 *Baring, Thomas, Esq., M.P. 41, *Upper Grosvenor-street, W.*
 1853 Barnett, Capt. Edward, R.N. 14, *Woburn-square, W.C.*
 1858 Barratt, James, Esq. *Lynne Hall, near Harrington, Cheshire.*
 1859 Barrington, the Hon. George. 51, *Eaton-square, S.W.*
 1854 †Barros, Don José Antonio. *Santamartha, New Granada.*
 1833 70 Barrow, John, Esq., F.R.S., F.S.A. 17, *Hanover-terrace, Regent's-park, N.W.*
 1856 Barth, Heinrich, Esq., PH. DR. *Berlin.*
 1857 Bartholomew, John, Junr., Esq. 4, *North Bridge, Edinburgh.*
 1837 *Bateman, James, Esq., F.R.S., L.S. *Knypersley-hall, Staffordshire.*
 1859 Bateman, John F., Esq., C.E. 16, *Great George-street, Westminster, S.W.*
 1852 *Bates, Josh., Esq. 21, *Arlington-st., Piccadilly, W.; and East Sheen, Surrey, S.W.*
 1858 Baxendale, Joseph H., Esq. 14, *Chester-terrace, Regent's-park, N.W.; and Scott's-bridge, near Rickmansworth, Herts.*
 1852 Beardmore, Nathaniel, Esq., C.E. 30, *Great George-street, Westminster, S.W.*
 1857 Beardmore, Septimus, Esq., C.E. 27, *Albion-street, Hyde-park, W.*
 1858 Beauclerk, Aubrey de Vere, Esq. *Ardglass, Co. Belfast.*
 1854 80 Beaumont, William Morris, Esq., Bengal Civil Service. *Bengal.*
 1856 Beaumont, John Aug., Esq. *Melrose-hall, Putney-heath, S.W.; and 50, Regent-street, W.*
 1851 *Beaumont, Wentworth B., Esq., M.P. 144, *Piccadilly, W.; Bywell-hall, Newcastle-upon-Tyne; and Bretton-park, Wakefield.*
 1830 Becher, Capt. Alex. B., R.N. *Admiralty, S.W.; and 29, Upper Gloucester-place, N.W.*
 1838 *Beckford, Francis, Esq. *Travellers' Club.*
 1854 Bedford, Commander Edward James, R.N. *Oban, N.B.*
 1850 Belford, Capt. G. Augustus, R.N. 31, *Royal-crescent, Notting-hill, W.*
 1855 Bedingfeld, Commander Norman B., R.N. 1, *James-street, Adelphi, W.C.*
 1846 Beke, Charles Tilstone, Esq., PH. DR., F.S.A., &c. *Mauritius; and 15, Philpot-lane, E.C.*
 1853 Belcher, Rev. Brymer. *St. Gabriel's, Pimlico, S.W.*
 1830 90 *Belcher, Capt. Sir Edward, C.B., F.R.A.S., R.N. *Union Club, S.W.*
 1858 Beldam, Edward, Esq. *Lincoln's-inn, W.C.; and Royston, Herts.*
 1848 Beldam, Joseph, Esq. *Royston, Herts.*
 1850 *Bell, James, Esq. 6, *Devonshire-place, Portland-place, W.*
 1830 *Bell, James Christian C., Esq. 42, *Westbourne-terrace, W.; and 15, Angel-court, Throgmorton-street, E.C.*
 1858 Bell, C. Davidson, Esq., Surveyor-General, Cape of Good Hope. *Cape Town.*

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- 1830 *Bennett, John Joseph, Esq., F.R.S. British Museum, W.C.
 1857 Bennett, J. Riston, Esq., M.D. 15, Finsbury-square, E.C.
 1856 Benson, Robert, Esq. 16, Cruton-hill-gardens, Bayswater, W.
 1855 *Benson, William, Esq., Barrister-at-Law. 6, Lincoln's-inn, W.C.; and Oxford and Cambridge Club, Pall Mall, S.W.
 1830 Bentham, George, Esq., F.L.S. 91, Victoria-street, Westminster, S.W.
 1833 Bentley, Richard, Esq. New Burlington-street, W.
 1859 Berens, H. Hulse, Esq. Hudson Bay House, Fenchurch-street, E.C.
 1858 Bernays, Adolphus, Esq., M.H. DR., Professor of German. King's College, W.C.; and 29, Inverness-road, W.
 1856 Berry, Josiah, Esq. 16, Regent-square, W.C.
 1842 *Bethune, R.-Admiral C. R. Drinkwater, c.b. 56, Westbourne-ter., Hyde-park, W.
 1836 Betts, John, Esq. 115, Strand, W.C.
 1860 Bidder, Geo. Parker, Esq., Pres. Inst. Civ. Eng. 24, Great George-st., S.W.; and Mitcham, Surrey.
 1845 *Biddulph, Robert, Esq. 43, Charing-cross, S.W.; 31, Eaton-place, S.W.; and Ledbury, Herefordshire.
 1859 Bigge, Frederick W., Esq. Union Club, S.W.
 1850 110 Bigsby, John J., Esq., M.D. 89, Gloucester-place, Portman-square, W.
 1858 Birch, Augustus F., Esq., M.A. Assistant Master, Eton College.
 1858 Birch, John William, Esq. 9th, New Broad-street, E.C.; and 27, Park-street, Grosvenor-square, W.
 1859 Birch, Capt. Thomas, R.N. United Service Club, S.W.
 1847 *Bird, James, Esq., M.D. 27, Hyde-park-square, W.
 1858 Bishop, George, Esq., F.R.A.S. 39, Portland-place, W.
 1836 *Blauw, William H., Esq., M.A., F.S.A., F.Z.S. Beechlands, near Uckfield, Sussex.
 1858 Blackett, Henry, Esq. 13, Great Marlborough-street, W.
 1849 Blackie, W. Graham, Esq., M.H. DR. 36, Frederick-street, Glasgow.
 1857 Blackstone, Alan C., Esq. Board of Works, Whitehall-place, S.W.
 1851 120 Blackwell, Thomas Evans, Esq., C.E. Grand Trunk Railway, Montreal, Canada.
 1854 Blaine, D. Robertson, Esq., Barrister-at-Law. 3, Paper-buildings, Temple, E.C.; and 8, Southwick-place, Hyde-park-square, W.
 1857 *Blake, Wollaston, Esq. 8, Devonshire-place, W.
 1859 Blakeley, Capt. Alexr., R.A. 24, Wilton-place, Belgrave-squares, S.W.
 1857 Blakiston, Captain Thomas, R.A. Royal Artillery Institution, Woolwich, S.E.
 1830 *Blanshard, Henry, Esq., F.R.A.S. 53, Chancery-lane, W.C.
 1857 Blanshard, Richard, Esq.
 1854 Blencowe, W. Robert, Esq. The Hook, Lewes.
 1839 *Blewitt, Octavian, Esq. 73, Great Russell-street, W.C.
 1843 *Bliss, Rev. Frederick. Hammoor Rectory, Blandford, Dorset.
 1852 130 Block, Samuel Richard, Esq. Green-hill, near Whetstone, Herts.
 1837 *Blunt, Jos., Esq. 13, Austin Friars, E.C.; and Leyden Ho., Mortlake, Surrey.
 1858 Bohn, Henry G., Esq. York-st., Covent-garden, W.C.; and North End House, Twickenham, S.W.

Year of
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- 1851 Bois, Henry, Esq. 110, Fenchurch-street, E.C.
 1850 Bollaert, Wm., Esq., Corr. Mem. University of Chile. 14, Brunswick-sq., W.C.
 1858 Bonner, G., Esq. 49, Pall-mall, S.W.; and 2, Baywater-ter., Kensington-sq., W.
 1859 Booth, Rev. James, LL.D. *The Vicarage, Stone, near Aylesbury.*
 1859 Borough, Sir Edward, Bart. 4, Nassau-street, Dublin.
 1845 *Borrer, Dawson, Esq. *Altmont Ballon, Co. Carlow, Ireland.*
 1856 Botcherby, Blackett, Esq., M.A. 48, Brompton-row, S.W.
 1839 140*Botfield, Beriah, Esq., M.P., F.R.S., F.S.A., F.R.S.N.A. 5, Grosvenor-place,
 S.W.; and Norton-hall, Daventry, Northamptonshire.
 1858 *Botterill, John, Esq. *Flower Bank, Burley-road, Leeds.*
 1860 Boustead, John, Esq. 34, Craven-street, Strand, W.C.
 1855 Bovet, Charles, Esq. 6, Belvoir Villas, Seven Sisters'-road, Holloway, N.
 1854 *Bowen, Sir George Ferguson, K.C.M.G., M.A. Governor of Queensland, Australia.
 1836 Bower, George, Esq. 6, Tokenhouse-yard, E.C.
 1833 Bowles, Admiral William, C.B. 8, Hill-street, Berkeley-square, W.
 1856 Bowman, John, Esq. 9, King William-street, E.C.
 1854 Bowring, Sir John, LL.D., F.R.S.N.A. *Athenaeum Club, S.W.*
 1845 *Boyd, Edward Lennox, Esq., F.S.A. 8, Waterloo-place, Pall-mall, S.W.
 1856 150 Boyne, G. Hamilton-Russell, Viscount. 22, Belgrave-square, S.W.; *Bronce-*
 peth Castle, Durham; and Burseerton Hall, Ludlow, Salop.
 1851 Bracebridge, Charles Rolt, Esq. *Atherstone, Warwick.*
 1858 Braddell, Thomas, Esq. *Magistrate at Penang.*
 1857 Brady, Cheyne, Esq., Barrister-at-Law. 104, Grafton-street, Dublin.
 1857 Bramston, Thomas W., Esq., M.P. *Carlton Club, W.; and Skreens, Chelmsford,*
 Essex.
 1854 Brand, George, Esq., M.A., F.S.A. 1, James-st., Adelphi, W.C.; *H.M.'s Consul,*
 Lagos, W. Africa.
 1859 *Brand, James, Esq. 109, Fenchurch-street, E.C.
 1857 Brant, James, Esq. *H.M.'s Consul at Damascus, 39, Mark-lane, E.C.*
 1857 Brasted, Rev. J. B. 27, Hampshire-terrace, Southsea, Hants.
 1852 Breadalbane, John, Marquis of, K.T., F.R.S. 21, Park-lane, W.; and *Taymouth-*
 castle, Aberfeldie.
 1845 160*Brent, George Smith, Esq. 1, Bedford-street, Strand, W.C.
 1846 Brereton, Rev. C. D., M.A. *Little Massingham, Rougham, Norfolk.*
 1833 *Brereton, Rev. John, LL.D., F.S.A. *Bedford.*
 1834 *Breton, William Henry, Esq., Lieut. R.N., M.R.I. 15, Camden-place, Bath.
 1857 Brett, John Watkins, Esq. 2, Hanover-square, W.
 1856 Brewer, Rev. John S., M.A., Professor of English Literature. *King's College,*
 W.C.; and Well Walk, Hampstead, N.W.
 1858 Bridges, Nathaniel, Esq. 20, Bedford-square, W.C.
 1852 *Brierly, Oswald W., Esq. 8, Lidlington-pl., Harrington-sq., Hampstead-rd.,
 N.W.
 1860 Bright, John, Esq., M.D. 12, Cambridge-square, Hyde-park, W.
 1857 Brine, Lieut. Bruce, R.E. *Brompton Barracks, Chatham.*

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- 1854 170 Brine, Capt. Frederick, R.E. Army and Navy Club, S.W.; Curragh Camp, Ireland; and Claremont, Sidmouth.
- 1856 Brise, Lieut. Lindesay, R.N. Claremont, Sidmouth; and H.M.S. 'Assistance.'
- 1833 *Brodie, Sir Benjamin C., Bart., D.C.L., President R.S., &c., Serjeant Surgeon to the Queen. 14, Savile-row, W.; and Broome-park, Surrey.
- 1848 Broke, Captain Sir George N., Bart., R.N. H.M.S. 'Hero' Sheerness; and Broke-hall, Suffolk.
- 1856 Brook, Captain William, 30th Regt. 6, Royal-terrace, Ramsgate.
- 1838 Brooke, Sir James, K.C.B., D.C.L. Athenaeum Club, S.W.
- 1856 *Brooking, George Thomas, Esq. 10, Connaught-square, W.
- 1856 *Brooking, Marmaduke Hart, Esq. 5, Norfolk-crescent, Hyde-park, W.
- 1843 *Brooking, Thomas Holdsworth, Esq. 14, New Broad-street, City, E.C.; and 5, Norfolk-crescent, Hyde-park, W.
- 1850 Broughton, John, Lord, G.C.B., M.A., F.R.S. 42, Berkeley-square, W.; and Erlestoke-park, Westbury, Wilts.
- 1859 180 Broughton, L. P. Delves, Esq. 25, Motcombe-street, Belgrave-square, S.W.
- 1856 *Brown, Daniel, Esq. The Elms, Larkhall-rise, Clapham, S.
- 1837 Brown, John, Esq., F.R.S.N.A. 3, Newcastle-place, Clerkenwell, E.C.; and Scaleby Lodge, Caudle-road, N.
- 1856 *Brown, S., Esq. 11, Lombard-st., E.C.; and The Elms, Larkhall-rise, Clapham, S.
- 1858 *Brown, Thomas, Esq. 8, Hyde-park-place West, W.
- 1859 Brown, William, Esq. Loft's-road, Clapham-park, S.
- 1858 Browne, John H., Esq. Port Gawler, S. Australia.
- 1858 Browne, William J., Esq. Port Gawler, S. Australia.
- 1852 Browning, Henry, Esq., M.R.I. 72, Grosvenor-street, W.; and Ampton-hall, Bury St. Edmund's.
- 1856 *Browning, Thomas, Esq. 6, Whitehall, S.W.
- 1859 190 Bruce, Henry Austin, Esq., M.P. 45, Wilton-crescent, S.W.
- 1856 Bryant, Walter, Esq., F.R.C.S. 7, Bathurst-street, Hyde-park-gardens, W.
- 1844 Bryden, William, Esq. 4, New Palace-yard, Westminster, S.W.
- 1843 *Buchan, John H., Esq. Mexico.
- 1859 Buckland, Edward C., Esq. 11, Lansdowne-road, Notting-hill, W.
- 1830 *Bullock, Rear-Admiral Frederick. Woohrich, S.E.
- 1839 Bunbury, E. H., Esq., M.A. 15, Jermyn-street, S.W.
- 1860 *Bunbury, Charles James Fox, Esq. Mildenhall, Suffolk.
- 1858 Burmester, Edward, Esq. St. Helen's-place, E.C.; and Springwell, Clapham-common, S.
- 1830 *Burney, Ven. Archd. Charles Parr, D.D., F.R.S., F.S.A. Rectory-house, Bishop's Wickham, Essex.
- 1857 200 Burstall, Commander E., R.N. 6, Park-villas, Lower Newington, S.
- 1830 *Burton, Alfred. F.R.S.

xx List of Fellows of the

Year of
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1858	Bury, William Coutts, Viscount, M.P. 48, Rutland-gate, S.W.
1859	Butler, Edward, Esq. Lansdowne-road, Hyde-park, W.
1860	*Butler, Rev. Thomas. Rector of Langar, Nottinghamshire.
1858	*Buxton, Sir Thomas Fowell, Bart. Brick-lane, N.E.
1851	Bynoe, Benjamin, Esq., Surgeon R.N.
1854	Byron, the Hon. Frederic. 48, Eaton-place, S.W.; and Langford, Maldon, Essex.
1830	210 *Cabbell, B. B., Esq., M.A., F.R.S., F.S.A. 1, Brick-court, Temple, E.C.; 52, Portland-place, W.; and Aldwick, Sussex.
1857	*Caldwell, Capt. Henry, R.N. * H.M.S. 'Mersey,' Portsmouth; and 3, Audley-square, W.
1855	*Calthorpe, the Hon. F. H. Gough, M.P. 33, Grosvenor-square, W.
1854	Calvert, Frederic, Esq., Q.C. 9, St. James's-place, S.W.; and 8, New-square, Lincoln's-inn, W.C.
1830	*Camden, George Charles, Marquis, K.G., D.C.L., M.A. Wilderness-park, Sevenoaks, Kent; and Bayham-abbey, Sussex.
1858	Cameron, Major-General Duncan Alexander, R.E., C.B., Vice-Pres. Council of Military Education. 1, Whitehall-yard, S.W.
1858	Cameron, Capt. Charles D. Vice-Consul, Redout Kalé, Mingrelia.
1844	*Campbell, James, Esq. Grove House, Hendon, Middlesex; and 8, Park-street, Grosvenor-square, W.
1857	†Campbell, James, Esq., Surgeon, R.N. Bangkok, Siam; and Luss, Dumbartonshire.
1834	*Campbell, James, Esq., jun., M.R.I. Hampton Court-green, S.W.
1857	220 Camps, William, Esq., M.D. 40, Park-street, Grosvenor-square, W.
1857	Cannon, Lieut.-General P. 10, Kensington-gardens-terrace, Hyde-park, W.
1853	*Cardwell, Right Hon. Edward, M.P. 74, Eaton-square, S.W.
1857	Carnarvon, Henry Earl of. Highclere-castle, near Newbury.
1857	Cartwright, Col. Henry, Grenadier Guards, M.P. 46, Park-st., Grosvenor-sq., W.
1830	*Cartwright, Samuel, Esq., F.R.S., F.S.A. 32, Old Burlington-street, W.; and Nizell's-house, Tonbridge.
1860	Carver, the Rev. Alfred J., Master of Dulwich College. Dulwich, S.
1858	Casella, Lucius P., Esq. 23, Hatton-garden, E.C.; and South-grove, Highgate, N.
1857	Cave, Capt. Laurence Trent. 23, Lowndes-street, Belgrave-square, S.W.
1858	Cave, Stephen, Esq., M.P. 22, Wilton-place, S.W.
1844	230 *Chadwick, Hugo Mavesyn, Esq. New Hall, near Sutton-Coldfield.
1857	Chalmers, Alexander Thomson, Esq., M.D.
1858	Champion, John Francis, Esq. 9, Canterbury-villas, Brixton, S.
1855	Chapman, John, Esq. 124, Pall Mall, S.W.; and 2, Leadenhall-street, E.C.
1854	*Chapman, Capt. John James, R.A. 33, Adelaide-square, Bedford.
	native Club, St. James's-street, S.W.

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- 1858 Chetwode, Augustus L., Esq. 2, Little Ryde-street, S.W.; and Chilton House, Thame, Oxfordshire.
- 1858 Childers, Hugh C. E., Esq. 24, Curzon-street, May-fair, W.; Little Bounds, Tunbridge Wells; and Australia.
- 1856 240 Childers, John Walbanke, Esq. Cantley Hall, near Doncaster.
- 1857 *Chimmo, Lieut. William, R.N. Skye Island; and Admiralty, S.W.
- 1850 Christmas, Rev. H., M.A., D.C.L., F.R.S., F.S.A. 30, Manor-street, Clapham, S.
- 1854 Christy, Henry, Esq. Woodbines, near Kingston, Surrey, S.W.
- 1854 *Church, J. W., Esq., B.A. United University Club, S.W.; and Woodside, Hatfield.
- 1830 *Church, W. H., Esq.
- 1849 Churchill, Lord Alfred Spencer, M.P. 16, Rutland-gate, S.W.
- 1856 Churchill, Charles, Esq. 29, Sussex-square, Hyde-park, W.
- 1853 Clarendon, George William, Earl of, K.G., G.C.B. 1, Grosvenor-crescent, S.W.; The Grove, Watford, Herts; and Hindon, Wilts.
- 1852 Clark, Daniel, Esq. 49, Milner-square, Islington, N.
- 1850 *250 Clark, Sir James, Bart., M.D., F.R.S. 22 b, Brook-street, W.
- 1851 Clark, Rev. Samuel, M.A. Principal of the Training College, Battersea, S.W.
- 1859 Clarke, Capt. A., R.E. Army and Navy Club, S.W.
- 1859 Clarke, Samuel, Esq., C.E. 12, Upper Brook-street, Ipswich.
- 1855 *Clarke, Rev. W. B., M.A. St. Leonard's, Sydney, New South Wales.
- 1859 Clarke, Rev. W. Geo., M.A. Trinity College, Cambridge.
- 1842 *Clavering, Sir William Aloysius, Bart. United University Club, Pall-Mall East, S.W.; and Axwell-park, near Gateshead.
- 1860 Clerk, Capt. Claude. 11, Prince's-terrace, Prince's-gate, Hyde-park, W.
- 1830 *Clerk, Rt. Hon. Sir George, Bart., D.C.L., F.R.S., &c. Penicuik-house, Edinburgh.
- 1858 Clermont, Thomas, Lord. Ravensdale-park, Flurry-bridge, Ireland.
- 1858 160 Clifford, Charles Cavendish, Esq., M.P. 92, Eaton-square, S.W.
- 1856 Clive, Rev. Archer. Whitfield, Hereford.
- 1854 Clowes, George, Esq. Duke-street, Stamford-street, Blackfriars, S.; and 89, Westbourne-terrace, W.
- 1854 Clowes, Wm., Esq. 31, Gloucester-ter., Hyde-park, W.; and Banstead, Surrey.
- 1852 Cobbold, John Chevallier, Esq., M.P. Athenaeum Club, S.W.; and Ipswich, Suffolk.
- 1859 Cochrane, Capt. the Hon. A., R.N., C.B. Junior United Service Club, S.W.
- 1859 Cocks, Colonel C. Lygon, Coldstream Guards. Treverbyn-Vean, near Liskeard.
- 1841 *Cocks, Reginald T., Esq. 43, Charing-cross, S.W.; and 22, Hortford-street, May-fair, W.
- 1857 Coghlan, Edward, Esq. Training Institution, Gray's-inn-road, W.C.
- 1858 Colchester, Charles, Lord, Rear-Admiral, D.C.L. 34, Berkeley-square, W.; and Kidbrooke, Sussex.
- 1853 270 Cole, John Griffith, Esq., M.A., M.R.I. 8, Charles-street, Berkeley-square, W.
- 1841 *Colebrooke, Sir Thomas Edward, Bart., M.P., F.R.A.S. 18, Park-lane, W.
- 1834 Colebrooke, Lt-General Sir Wm., R.A., M.G., C.B., K.H., F.R.A.S. Datchet, near Windsor; and United Service Club, S.W.

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- 1854 Coleman, Everard Home, Esq., F.R.A.S. *Registry and Record Office, Adelaide-place, London Bridge, E.C.*
- 1848 Coles, Charles, jun., Esq. *86, Great Tower-street, E.C.*
- 1835 *Collett, William Rickford, Esq.
- 1858 Collinson, Henry, Esq. *8, Delamere-street, Paddington, W.*
- 1855 Collinson, Captain Richard, C.B., R.N. *Haven-lodge, Ealing, W.; and United Service Club, S.W.*
- 1860 Coningham, William, Esq., M.P. *Kemp Town, Brighton.*
- 1843 *Cook, James, Esq. *40, Mincing-lane, E.C.; and 47, Portland-place, W.*
- 1859 280 Cooke, Major A. C., R.E. *Topographical Department, 4, New-street, Spring-gardens, S.W.*
- 1860 Cooke, George Wingrove, Esq., Barrister-at-Law. *23, Cheyne-walk, Temple, E.C.*
- 1856 Cooke, John George, Esq. *Martin and Co., Lombard-street, E.C.*
- 1860 Cooke, Nathaniel, Esq. *5, Ladbrooke-terrace, Notting-hill, W.*
- 1852 Cooke, Robt., Esq. *50, Albemarle-st., W.; and 38, Nottingham-pl., New-road, W.*
- 1830 Cooley, William Desborough, Esq. *10, Portman-street, Portman-square, W.*
- 1843 *Cooper, Capt. D. S., 1st Royal Regt. *Army and Navy Club, S.W.*
- 1856 Cooper, Lt.-Col. Edward, Grenadier Guards. *36, Hertford-street, W.*
- 1860 Cooper, Capt. Joshua H. *7th Fusiliers, Dépôt, Chatham.*
- 1853 Coote, Charles Chidley, Esq. *C4, Albany; and Mount-Coote, Limerick, Ireland.*
- 1857 290 Coote, Captain Robert, R.N. *H.M.S. 'Victory,' Portsmouth.*
- 1853 Copley, Sir Joseph William, Bart. *Sproborough, Doncaster.*
- 1839 *Corrane, Frederick, Esq. *Parkham-hall, Wickham Market, Suffolk.*
- 1856 Costerton, John C., Esq. *Canton.*
- 1853 Cosway, William Halliday, Esq. *Oxford and Cambridge Club, S.W.*
- 1857 *Cowell, Major J. C., R.E. *Buckingham-palace, S.W.*
- 1854 Cowley, Norman, Esq. *4, Montagu-place, Montagu-square, W.*
- 1859 Cracroft, Major Henry. *Upton Villas, Haven-green, Ealing, W.*
- 1853 *Cracroft, Captain Peter, R.N. *H.M.S. 'Niger,' Australia.*
- 1858 Cranbourne, James, Viscount. *20, Arlington-street, S.W.*
- 1853 300 Craufurd, Captain Frederic A. B., R.N. *Senior United Service Club, S.W.*
- 1857 Craufurd, Major-General James R. Cabe, Grenadier Guards. *Travellers' Club, S.W.; and Sunning-hill, Chertsey.*
- 1857 Crawford, James, Esq. *Bruiss, Turkey; and Strathleven, Dumbartonshire, N.B.*
- 1848 Crawford, Robert Wigram, Esq., M.P. *71, Old Broad-street, E.C.*
- 1830 Crawford, John, Esq., F.R.S. *Athenaeum Club, S.W.; and 21, Wilton-st., S.W.*
- 1854 *Creswell, Captain S. Gurney, R.N. *Lynn, Norfolk.*
- 1859 Creyke, Commander R. Boynton, R.N. *Oban, N.B.*
- 1856 Croker, T. F. Dillon, Esq. *19, Pelham-place, Brompton, S.W.*
- 1860 Crosse, the Rev. Thomas, D.C.L. *Hastings.*
- 1852 Crowdy, James, Esq. *17, Serjeants'-inn, E.C.*
- 1839 310 *Cubitt, Sir William, F.R.S., C.E. *19, Great George-street, Westminster, S.W.; and Clapham-common, Surrey, S.*
- 1844 *Cubitt, Mr. Alderman William, M.P. *Gray's-inn-road, W.C.; and 21, Abchurch-lane, E.C.*

Year of Election.	
1856	Cull, Richard, Esq. 13, Turstock-street, Bedford-square, S.W.
1857	Cumming, William F., Esq., M.D. <i>Athenaeum Club, S.W.</i> ; and <i>Athol-crescent, Edinburgh.</i>
1847	Cunard, Edward, Esq. <i>New York.</i>
1846	Cunard, Sir Samuel, Bart. <i>Houchin's Hotel, St. James's-street, S.W.</i>
1860	Cunliffe, Roger, Esq. 24, Lombard-street, E.C.; and 10, Queen's-gardens, S. Kensington, W.
1838	*Cunningham, George Godfrey, Esq. <i>Windermere, Westmoreland.</i>
1859	Cunningham, H. D. P., Esq., R.N. <i>Bury, near Gosport, Hants.</i>
1853	Cunningham, John Wm., Esq., Sec. King's College, <i>Somerset-house, W.C.</i> ; and <i>Harrow.</i>
1843	320*Cursetjee, Manockjee, Esq., F.R.S.N.A. <i>Villa-Byculla, Bombay.</i>
1839	*Curtis, Timothy, Esq.
1857	Dalton, D. Foster Grant, Esq. <i>Parkstone, near Poole</i> ; and <i>Shanks House, near Somerset.</i>
1859	Dalyell, Robt. Alex. Osborn, Esq. <i>H.M.'s Consul-General, Erzorûm</i> ; and <i>Royal Hospital, Greenwich, S.E.</i>
1851	*Daniell, Wm. Freeman, Esq., M.D., F.L.S. 17, <i>Charles-st., St. James's-sq., S.W.</i>
1838	*Darwin, Charles, Esq., M.A., F.R.S. <i>Athenaeum Club, S.W.</i> ; and <i>Down, near Bromley, Kent.</i>
1860	Dasent, John Bury, Esq. 22, <i>Warwick-road, Maida-hill, W.</i>
1858	Davies, William, Esq.
1858	Davis, Francis William, Assist.-Surgeon, R.N. <i>Royal Hospital, Greenwich, S.E.</i> ; and <i>Lurganaboy House, Manor Hamilton, Ireland.</i>
1846	Davis, Sir John Francis, Bart., K.C.B., F.R.S., F.R.S.N.A. <i>Athenaeum Club, S.W.</i> ; and <i>Hollywood, near Bristol, Gloucestershire.</i>
1855	330 Davis, Rev. Nathaniel. <i>Tunis.</i>
1840	*Dawnay, the Hon. Payan. <i>Beningborough-hall, Yorkshire.</i>
1830	*Dawson, Lieut.-Col. R. K., R.E. <i>Copyhold Enclosure and Tithe Commission</i> , 3, <i>St. James's-square, S.W.</i>
1859	De Blaquier, John, Lord. 16, <i>Norfolk-street, Park-lane, W.</i>
1852	De Boinville, Chev. Alexander, K.L.H. 4, <i>Dudley-place, Maida-hill West, W.</i>
1858	De Bourgho, T. J., Esq. <i>Orchardfield, Leith-walk, Edinburgh.</i>
1856	De Crespinny, Lieut. C. A. C., R.N. 8, <i>Cournaught-place, Hyde-park, W.</i> ; and <i>Borneo.</i>
1856	De Gex, William Francis, Esq. 8, <i>Serle-street, Lincoln's-inn, W.C.</i>
1853	De Grey and Ripon, George Frederick Samuel, Earl. 1, <i>Carlton-gardens, S.W.</i> ; and <i>Studley Royal, Ripon.</i>
1859	De la Motte, Lt.-General Peter, C.B. 15, <i>Craven-hill-gardens, Baywater, W.</i>
1854	340 De la Rue, William Frederick, Esq. 110, <i>Bunkhill-row, Chiswell-street, E.C.</i>
1834	*Denison, His Excellency Sir William Thomas, Lieut.-Col. R.E., F.R.S. <i>Governor-General of Australia.</i>
1836	Denman, Capt. the Hon. Jos., R.N. 17, <i>Eaton-terrace, S.W.</i> ; and <i>H.M. Yacht.</i>
1833	*Derby, Edward Geoffrey, Earl of, F.C., F.L.S. 23, <i>St. James's-square, S.W.</i> ; and <i>Knowsley-park, Prescott, Lancashire.</i>

Year of Election.	
1837	De Ros, Rear-Admiral the Hon. J. F. Frederick, F.R.S. 122, Piccadilly, W.
1854	*Devaux, Alexander, Esq. 2, Avenue-road, Regent's-park, N.W.
1837	*Devonshire, William Cavendish, Duke of, LL.D., M.A., F.R.S. Devonshire House, Piccadilly, W.; and Hardwicke Hall, Derbyshire.
1833	Dickenson, John, Esq., F.R.S., F.S.A. 39, Upper Brook-street, W.; and Abbott's-hill, Hemel-Hempstead.
1852	*Dickenson, John, Esq., jun. Clarence Chambers, 12, Haymarket, S.W.; and Abbott's-hill, Hemel-Hempstead.
1854	Dickenson, Sebastian Stewart, Esq., Barrister-at-Law. Brown's-hill, Stroud, Gloucestershire.
1844	350 Dickenson, Major-Gen. Thomas, Bon. Eng., F.R.A.S. Hurstpierpoint, Sussex.
1860	Dickinson, Rev. C. S. Allen, B.A. 66, Hamilton-ter., St. John's Wood, N.W.
1830	*Dickinson, Francis Henry, Esq., F.S.A. 8, Upper Harley-street, W.; and King-weston-park, Somerset.
1860	Dickinson, Jas. Austen, Esq. 56, Upper Bagot-street, Dublin.
1859	Dickson, A. Benson, Esq. 19, Old-buildings, Lincoln's-inn, W.C.
1858	Dickson, Charles Hammer, Esq. H.M. Consul, Sékum Kald, Black Sea.
1843	Dickson, Peter, Esq. 28, Upper Brook-street, W.
1860	Dietz, Bernard, Esq., of Algoa Bay. 3, Dorset-square, W.
1859	Digby, G. Wingfield, Esq. 35, Brook-street, Grosvenor-square, W.; and Sherborne Castle, Dorset.
1860	Digby, Lt.-Colonel John Almerus. 6, Charles-street, Berkeley-square, W.
1836	360 *Dilke, Charles Wentworth, Esq. 76, Sloane-street, S.W.
1845	*Dilke, Charles Wentworth, Esq., jun. 76, Sloane-street, S.W.
1859	*Dilke, Charles Wentworth. 76, Sloane-street, S.W.
1856	Dillon, the Hon. Arthur. 17, Clarges-street, W.
1840	*Divett, Edward, Esq., M.P. Bystock, near Exmouth, Devon.
1854	Dixon, W. Hepworth, Esq., F.S.A. Essex Villa, Queen's-rd., St. John's-wood, N.W.
1857	Dobie, John, Esq., R.N. Junior United Service Club; and Club Chambers, S.W.
1857	Dobie, Robert, Esq., M.D., R.N. 7, Houghton-place, Ampthill-sq., Hampstead-road, N.W.
1841	*Dodd, George, Esq., F.S.A. 9, Grosvenor-place, S.W.
1854	Dodson, John George, Esq., M.P. 49, Upper Seymour-st., Portman-square, W.
1854	370 *Dollond, George, Esq. St. Paul's Churchyard, E.C.
1854	Downville, William T., Esq., R.N., M.D. Army and Navy Club, S.W.
1836	Donaldson, Rev. J. W., D.D., F.R.A.S. Athenaeum Club, S.W.
1853	Donaldson, Stuart, Esq. 22, Rutland-gate, S.W.; and Sydney, Australia.
1854	Donkin, Henry, Esq.
1858	Donne, John, Esq. 2, Powis-place, Bloomsbury, W.C.
1850	Dover, John William, Esq. 124, Fenchurch-street, E.C.
1854	Dower, John, Esq. 168, Pentonville-road, N.
1853	Doyle, Sir Francis Hastings C., Bart. Custom House, E.C.
1845	*Drach, Solomon Moses, Esq., F.R.A.S. 23, Walpole-st., King's-rd., Chelsea, S.W.
1846	380 Drummond, Lieut.-General John. The Boyce, Dymoch, Gloucestershire.
1846	Drury, Capt. Byron, R.N. Grove-road, Southsea.

Year of Election.	
1851	*Du Cane, Major Francis, R.E. 64, <i>Londes-square, S.W.</i>
1851	*Ducie, Henry John, Earl, F.R.S. 30, <i>Princes-gate, S.W.</i>
1859	Ducket, Clark A., Esq., Assist.-Surg. R.N. <i>Royal Hospital, Haslar.</i>
1859	*Duckworth, Henry, Esq. 2, <i>Gambier-terrace, Liverpool.</i>
1857	Dufferin, Frederick Temple, Lord. <i>Dufferin Lodge, Highgate, N.; and Clarendon-house, Belfast.</i>
1840	*Dundas, Right Hon. Sir David, Q.C. 13, <i>King's-Bench-walk, Temple, E.C.; and Ochtertyre, Co. Perth.</i>
1830	*Dundas, Vice-Admiral the Hon. Sir Richard Saunders, K.C.B. 13, <i>New-street, Spring-gardens, S.W.</i>
1850	Dunlop, A. Graham, Esq. <i>Attacked to H.M.'s Legation, Clary Palace, Vienna; and Wyndham Club, S.W.</i>
1859	390 Dunlop, R. H. Wallace, Esq., Indian Civil Service. <i>Delgany, Co. Wicklow.</i>
1837	*Dunraven, Edwin Richard, Earl of, F.R.S. <i>Adare-manor, Limerick; and Dunraven-castle, Glamorganshire.</i>
1856	Duprat, Chevalier Alfredo. <i>H.M.F. Arbitrator, Cape Town, Cape of Good Hope.</i>
1852	D'Urban, Colonel W. J. <i>Deputy Quartermaster-General, Canada; and Junior U.S. Club, S.W.</i>
1858	Eardley, Sir Culling E., Bart. <i>Belleidere, Erith.</i>
1857	Eardley, Rev. E. G. Culling. <i>Teston-rectory, Maidstone.</i>
1854	Eardley-Wilmot, Capt. A. P., R.N., C.B. <i>H.M.S. 'Nile,' Queenstown.</i>
1856	Eardley-Wilmot, Col. F., M.R.A. <i>Director of the Cannon Foundries, Woolwich, S.E.</i>
1857	Eastwick, Captain W. J. 12, <i>Leinster-terrace, Hyde-park, W.</i>
1858	Edge, Rev. W. J., M.A. <i>Benenden Vicarage, near Staplehurst, Kent.</i>
1860	400 Egerton, Colonel the Hon. Arthur. <i>Bridgewater-house, S.W.</i>
1857	Egerton, Commander Charles Randell, R.N. 7, <i>Rutland-gate, S.W.</i>
1853	Egerton, Captain the Hon. Francis, R.N. <i>Bridgewater-house, S.W.; and H.M.S. 'Royal Albert.'</i>
1859	Elgin and Kincardine, James Bruce, the Earl of, G.C.B. <i>Athenaeum Club, S.W.; and Broom Hall, Dunfermline.</i>
1845	Ellenborough, Edward, Earl of, G.C.B. 108, <i>Eaton-square, S.W.; and Southam-house, near Cheltenham.</i>
1855	Ellesmere, George Granville Francis, Earl of, &c. &c. <i>Bridgewater-house, Cleveland-square, S.W.; and Worsley-hall, Lancashire.</i>
1830	*Elliott, Rev. Charles Boileau, M.A., F.R.S. 47, <i>Portland-place, W.; and Tattingstone, Suffolk.</i>
1855	†Elliott, Christopher, Esq., M.D. <i>Colombo, Ceylon.</i>
1858	Elphinstone, Captain Howard, R.E. <i>Buckingham Palace, S.W.</i>
1857	Elton, Sir Arthur H., Bart. <i>Athenaeum Club, S.W.; and Clevedon Court, Somersetshire.</i>
1830	410 Enderby, Charles, Esq., F.R.S., F.L.S. 13, <i>Great St. Helen's, E.C.</i>
1860	Enfield, Edward, Esq., F.S.A. 19, <i>Chester-terrace, Regent's-park, N.W.</i>
1856	Entwistle, John, Esq. 1, <i>Russell-square, W.C.</i>
1852	Erskine, Rear-Admiral John Elphinstone, C.B. <i>H.M.S. 'Edgar,' 1 L, Albany, W.; and Cardross, Stirling, N.B.</i>

Year of Election.	
1857	*Esmead, G. M. M., Esq. 29, Park-street, Grosvenor-square, W.
1850	Espinasse, Capt. J. W., 12th Regt. Cox and Co., Craig's-court, S.W.
1851	Evans, Rev. Charles. Rugby.
1857	Evans, Frederic J., Esq., R.N., F.R.A.S. 4, Wellington-terrace, Charlton, Blackheath, S.E.
1830	*Evans, Rear-Admiral George. 1, New-street, Spring-gardens, S.W.; and Englefield-green, Chertsey.
1857	Evans, Thos. Wm., Esq., M.P. 7, Stratford-place, W.; and Allestree Wall, Derby.
1830	420*Evans, W. Esq.
1851	*Evelyn, William J., Esq., F.R.A. Wotton-house, near Dorking.
1845	*Everest, Col. Geo., Bengal Art., F.R.S., &c. 10, Westbourne-st., Hyde-park, W.
1830	*Everett, James, Esq.
1859	Ewart, William, Esq., M.P. 6, Cambridge-square, W.
1839	Ewer, Walter, Esq., F.R.S., F.L.S. 8, Portland-place, W.
1856	Ewing, J. D. Cram, Esq. 21, Birchin-lane, E.C.
1857	Eyre, Edward J., Esq., Lieut.-Governor of Antigua.
1856	†Eyre, Col. Vincent, c.b. Athenaeum Club, S.W.; and India.
1855	Fagan, Lieut.-Col. C. G., Bengal Army. Gresham-house, Old Broad-street, E.C.
1857	430 Fairholme, Lieut. Chas., R.N. H.M.S. 'Megara'; and York-ter., Leamington.
1856	Fairholme, George Knight, Esq. Union Club, S.W.; and Ravenswood, Melrose, N.B.
1838	Falconer, Thomas, Esq. Usk, Monmouthshire.
1857	Falkland, Lucius Bentinck, Viscount. Skuttershelfe, Yorkshire.
1855	*Fanshawe, Capt. E. G., R.N. 27, Rutland-gate, Hyde-park, S.W.
1854	Farmer, William Francis Gamul, Esq. Nonsuch-park, Surrey.
1857	Farrer, Thomas H., Esq. Board of Trade, S.W.; and 21, Chester-terrace, Regent's-park, N.W.
1853	*Fayrer, Joseph, Esq., M.D. 15, Surrey-street, Strand, W.C.
1858	Fazakerley, J. N., Esq. 17, Montagu-street, Portman-square, W.
1838	*Fellows, Sir Charles. 4, Montagu-place, Russell-square, W.C.; Cowes, Isle of Wight; and Beeston, Nottinghamshire.
1856	440 Ferguson, Rev. Robert, LL.D., F.R.A. St. Albans Villa, Ryde, Isle of Wight.
1856	Ferguson, William, Esq. Gresham-house, 62, Old-Broad-street, E.C.; and 9, Well-walk, Hampstead, N.W.
1840	*Fergusson, James, Esq., F.R.A.S. 20, Langham-place, W.
1830	Findlay, Alexander, Esq. Hayes, Kent, S.E.
1844	Findlay, Alex. George, Esq. 53, Fleet-street, E.C.
1859	Fisher, Anthony L., Esq., M.D. 14, York-place, Baker-street, Portman-square, W.
1859	Fisher, Robert, Esq. 46a, Pall-mall, S.W.; and Parthenon Club, S.W.
1830	*Fitton, Wm. Henry, Esq., M.D., F.R.S., F.L.S. Athenaeum Club, S.W.; and 4, Sussex-gardens, Hyde-park, W.
1857	*Fitzclarence, Lieut. the Hon. George, R.N. 1, Addison-road, Kensington, W.
1859	Fitz-Roy, George Henry, Esq. 51, Portland-place, W.

Year of Election.	
1830	450 Fitz-Roy, Rear-Admiral Robert, F.R.S. <i>Board of Trade, S.W.; Athenaeum Club, S.W.; and 38, Onslow-sq., Brompton, S.W.</i>
1857	Fitzwilliam, the Hon. C. W., M.P. <i>60, St. James's-street, S.W.</i>
1853	*Fleming, Rev. Francis. <i>Kidmore End, Henley-on-Thames.</i>
1857	Fletcher, Thomas K., Esq. <i>Union-dock, Limehouse, E.</i>
1847	Forrester, Joseph J., Esq., F.S.A. <i>24, Crutched Friars, E.C.; and Oporto.</i>
1845	Forster, Rev. Charles, B.D. <i>Stisted Rectory, Essex.</i>
1839	*Forster, William Edward, Esq. <i>Burley, near Otley.</i>
1844	*Fortescue, Hugh, Lord. <i>17, Bruton-st., W.; and Castle-hill, South Molton, Devon.</i>
1858	Fortescue, Chichester S., Esq., M.P. <i>45, St. James's-place, S.W.</i>
1841	*Fowler, Rear-Admiral Robert M. <i>Wallscombe-house, Pangbourne.</i>
1850	460 *Fowler, Robert N., Esq., M.A. <i>50, Cornhill, E.C.; and Tottenham, N.</i>
1859	Fox, Lieut.-Colonel A. Lane. <i>Park-hill, Clapham, S.</i>
1830	*Fox, Lt.-Gen. C. R. <i>Travellers' Club, S.W.; and 1, Addison-rd., Kensington, W.</i>
1860	Franks, Charles W., Esq. <i>5, John-street, Berkeley-square, W.</i>
1854	Fraser, Charles, Esq. <i>38, Conduit-street, W.</i>
1830	Fraser, Major-General John, R.E. <i>Deputy Quartermaster-General, Ceylon.</i>
1859	Freeman, H. Stanhope, Esq. <i>Vice-Consul, Ghadamis; and 4, Royal-crescent, Notting-hill, W.</i>
1860	Freeman, Daniel Alexander, Esq. <i>Upper Tooting.</i>
1856	Fremantle, Et. Hon. Sir Thomas F., Bart. <i>4, Upper Eccleston-street, Belgrave-square, S.W.</i>
1852	French, Dr. James, C.B. <i>Inspector-General of Hospitals, Graham's Hotel, Edinburgh.</i>
1850	470 Frere, Bartle J. L., Esq. <i>45, Bedford-square, W.C.</i>
1839	*Frere, George, Esq., jun. <i>Cape of Good Hope; and 45, Bedford-square, W.C.</i>
1842	Frere, William Edw., Esq., F.R.A.S. <i>Bombay; and 45, Bedford-square, W.C.</i>
1853	Frith, John Griffith, Esq. <i>13, Wimpole-street, W.; and 11, Austin Friars, E.C.</i>
1859	Fryer, William, Esq. <i>10, Marlborough-hill-gardens, St. John's Wood, N.W.</i>
1855	Fuller, J., Esq. <i>Stevens' Hotel, Bond-street, W.</i>
1860	Fussell, Rev. J. G. Curry. <i>16, Cadogan-place, S.W.</i>
1855	*Gabriel, Edmund, Esq. <i>H.M.'s Arbitrator, St. Paul de Loando; and 1, James-street, Adelphi, W.C.</i>
1845	*Gage, Admiral Sir William Hall, G.C.H., K.C.B. <i>Thurston Cottage, Bury St. Edmund's, Suffolk.</i>
1855	*Galloway, John James, Esq. <i>14, Trinity-square, Tower-hill, E.C.</i>
1848	480 *Galton, Capt. Douglas, R.E. <i>12, Chester-street, Grosvenor-place, S.W.</i>
1850	*Galton, Francis, Esq., M.A. <i>42, Rutland-gate, S.W.; and 5, Bertie-terrace, Leamington.</i>
1854	*Gammell, Andrew, Esq. <i>Drumtochty, Kincardineshire, N.B.</i>
1859	Gammie, George, Esq. <i>Shotover House, Wheatley, Oxon.</i>
1833	Gascoigne, Capt., Ceylon Rifles. <i>Athenaeum Club, S.W.</i>
1859	*Gassiot, John, P., Junr., Esq. <i>6, Sussex-place, Regent's-park, N.W.</i>

Year of Election.	
1858	Gaassen, William, Esq. 12, Montagu-place, Russell-square, W.C.
1858	*Gawler, Colonel George, K.H. United Service Club, S.W.
1859	Gerstenberg, Isidore, Esq. 2, Hercules-passage, Bank, E.C.
1859	*Gibbes, Charles, Esq. 24, Cavendish-square, W.
1859	490* Gibbs, H. Hucks, Esq. St. Dunstan's, Regent's-park, N.W.
1853	Gifford, George, Earl of, M.P. 2, Wilton-street, Grosvenor-place, S.W.
1857	Gilchrist, John, Esq. 48, Porchester-terrace, W.
1855	Gillespie, Alexander, Esq. 38, Gordon-square, W.C.
1857	Gillespy, Thomas, Esq. Brabant-court, Philpot-lane, E.C.
1857	Gilmore, Lieut. A. H., R.N. H.M.S. 'Renown,' Channel Squadron.
1852	Gisborne, Lionel, Esq., C.E. 6, Duke-street, Adelphi, W.C.
1856	Gladdish, William, Esq. Bycliffes, Gravesend.
1846	*Gladstone, William, Esq. 57½, Old Broad-street, E.C.
1857	Gleig, Rev. G. R., M.A. Chaplain-General, Chelsea-hospital, S.W.
1854	500 Glen, Joseph, Esq., M.D., Mem. Geogr. Soc. of Bombay. Oriental Club, W.
1857	Glennie, John S. Stuart-, Esq., F.S.A., Barrister-at-law. Reform Club, S.W.; and 6, Stone-buildings, Lincoln's-inn, W.C.
1857	Glover, Lieut. John H., R.N. Army and Navy Club, S.W.
1860	Glyn, Commr. H. Carr, R.N. 1, Eccleston-street, Belgrave-square, S.W.
1858	Glyn, Pascoe Charles, Esq. Gresham-house, 62, Old Broad-street, E.C.; and 1, Upper Eccleston-street, Belgrave-square, S.W.
1858	Godley, John Robert, Esq. War Office, S.W.
1857	Goldsmid, Aaron A., Esq. 8, Cavendish-square, W.
1858	Goldsmid, Frederick D., Esq. 50, Harley-street, W.
1856	Gordon, Alexander, Esq., C.E. 3, Middle Scotland-yard, Whitehall, S.W.
1856	*Gordon, Colonel the Hon. Alexander H., C.B. Argyll-house, Regent-street, W.
1860	510 Gordon, the Honourable Arthur. 7, Argyll-street, W.
1858	Gordon, Capt. Charles C., R.E. Brompton Barracks, Chatham.
1854	Gordon, Harry George, Esq. 1, Clifton-place, Hyde-park-gardens, W.; and Killiechassi, Dunkeld, Perthshire.
1856	Gordon, James Wilkinson, Esq. 10, New Palace Yard, S.W.
1856	Gordon, Rear-Admiral the Honourable John. 13, Queen Anne-street, W.
1853	Gordon, Rear-Admiral Robert. United Service Club, S.W.
1853	Gore, Montagu, Esq. 20, South Audley-street, W.
1853	Gore, Richard Thomas, Esq. 6, Queen-square, Bath.
1853	Gorman, John, Esq., M.D. Mark-lane, E.C.
1859	Goaling, Fred. Solly, Esq. 1, Gray's-inn-square, W.C.
1855	520 Gould, Lieut.-Colonel Francis A. Buntingford, Herts.
1846	Gould, John, Esq., F.R.S., F.L.S. 26, Charlotte-street, Bedford-square, W.C.
1850	*Gowen, James Robert, Esq. 4, Codrington-place, Western-road, Brighton.
1858	Graham, Cyril C., Esq. Cairo.
1853	*Graham, the Right Hon. Sir James R. G., Bart., M.P., F.R.S., &c. 46, Grosvenor-place, S.W.; and Netherby, near Carlisle.

Year of Election.	
1857	Grant, Capt. W. C., 2nd Dragoon Guards. <i>Junior U.S. Club, S.W.; and Brigade Major, Lucknow.</i>
1830	Gray, John Edw., Esq., PH.D., F.R.S., Z.S. and L.S. <i>British Museum, W.C.</i>
1830	Greene, Thomas, Esq. <i>Slyne, Lancaster; and Whittington-hall, near Burton, Westmoreland.</i>
1857	*Greenfield, W. B., Esq. <i>2, Porchester-terrace North, W.</i>
1858	*Gregory, Augustus Chas., Esq. <i>Sydney.</i>
530	Gregory, Charles Hutton, Esq., C.E. <i>1, Delahay-street, Westminster, S.W.</i>
1858	*Gregory, Isaac, Esq. <i>Chorlton Hall, Manchester.</i>
1857	*Grellet, Henry Robert, Esq. <i>7, Lloyd-street, Lloyd-square, E.C.</i>
1859	Grenfell, Chas. Pascoe, Esq., M.P. <i>38, Belgrave-square, S.W.</i>
1858	Grenfell, Pascoe St. Leger, Esq. <i>Maesteg-house, Swansea.</i>
1853	Grenfell, Riversdale W., Esq. <i>27, Upper Thames-street, E.C.</i>
1830	*Greswell, Rev. Richard, M.A., F.R.S. <i>39, St. Giles, Oxford.</i>
1837	*Grey, Sir George, K.C.B. <i>Governor & Commander-in-Chief, Cape of Good Hope.</i>
1844	*Grey, Ralph Wm., Esq. <i>47, Belgrave-sq., S.W.; and Chipchase-castle, Hexham.</i>
1839	Griffith, John, Esq. <i>16, Finsbury-place South, E.C.</i>
1836	540 Griffith, Richard Clewin, Esq. <i>10, Gower-street, Bedford-square, W.C.</i>
1859	Grimston, the Hon. and Rev. Francis S. <i>Wakes Colne, Halstead.</i>
1855	Grindrod, R. B., Esq., M.D., LL.D., F.L.S., &c. <i>Townsend-house, Malvern.</i>
1858	Grote, George, Esq. <i>12, Savile-rose, W.</i>
1857	Grunisen, Charles Lewis, Esq. <i>16, Surrey-street, Strand, W.C.</i>
1858	Gudsford, Thomas, Esq. <i>Travellers' Club, S.W.</i>
1830	*Gurney, Hudson, Esq., F.R.S., F.S.A., F.R.S.N.A. <i>9, St. James's-square, S.W.; and Kennick-hall, near Norwich.</i>
1859	*Gurney, John H., Esq., M.P. <i>24, Kensington Palace Gardens, W.</i>
1857	Gurney, Samuel, Esq., M.P. <i>25, Princes-gate, Hyde-park, S.W.; and Carshalton, Surrey.</i>
1853	*Halkett, Rev. Dunbar S. <i>Little Bookham, Surrey.</i>
550	*Halkett, Lieut. Peter A., R.N. <i>Wyndham Club, S.W.</i>
1853	Hall, Captain William Hutcheson, R.N., C.B., F.R.S. <i>United Service Club, S.W.; Shipbourne Lodge, Tunbridge; and 23, Lansdowne-road, Kensington-park, W.</i>
1856	Halloran, Alfred L., Esq., Master R.N. <i>Coast Guard, Polperro, near Liskeard.</i>
1858	Halloran, Arthur B., Esq. <i>Principal of the South Devon Collegiate School, Heavitree, Exeter.</i>
1857	Hamilton, Edward, Esq., M.D. <i>22, Grafton-street, W.</i>
1857	Hamilton, Edward Terrick, Esq. <i>32, Upper Brook-street, W.</i>
1830	*Hamilton, Capt. Henry G., R.N. <i>71, Eccleston-square, S.W.</i>
1830	Hamilton, Terrick, Esq. <i>121, Park-street, Grosvenor-square, W.</i>
1846	Hamilton, Rear-Admiral W. A. Baillie. <i>Macartney-house, Blackheath, S.E.</i>
1837	Hamilton, Wm. John, Esq., F.R.S. <i>23, Chesham-place, S.W.</i>

Year of
Election.

- 1830 560 Hammersley, Charles, Esq. 25, Park-crescent, Portland-place, W.
 *Hammond, Rev. J. W., B.D., Fellow of St. John's College, Oxford. Reform Club, S.W.
- 1853 *Hand, Captain George S., R.N. United Service Club, S.W.; and H.M.S. 'Sampson.'
- 1857 Hankey, Thomson, Esq., M.P. 45, Portland-place, W.
- 1837 *Hanner, Sir J., Bart., M.P., F.R.S. Hammer-hall and Bettisfield-park, Flintshire.
- 1859 *Hansard, Henry, Esq. 14, Park-square, Regent's-park, N.W.
- 1840 *Harcourt, Egerton, Esq. Athenaeum Club, S.W.; and 5, Carlton-gardens, S.W.
- 1853 Harcourt, Rear-Admiral Octavius Vernon. 29, Devonshire-place, Portland-place, W.; and Swinton-park, Bedale, Yorkshire.
- 1834 *Harding, Major-Gen. George Judd, C.B. Lieut.-Governor of Guernsey.
- 1854 Hardy, Peter, Esq., F.R.S. 36, Brunswick-square, W.C.
- 1830 570* Harriott, Colonel T. G., R. Staff Corps. Twickenham, S.W.
- 1855 Harris, the Hon. and Rev. C. A. Rownham's Parsonage, Southampton.
- 1853 Harris, Capt. the Hon. E. A. J., R.N. H.B.M.'s Minister Plenipotentiary, Berne.
- 1852 Harris, George Frederick, Esq., M.A. Harrow-park, Middlesex, N.W.
- 1859 Harris, Capt. Henry. 15, Gloucester-terrace, Hyde-park, W.
- 1859 Harrison, C. H. Rogers, Esq. 13, Lansdowne-road, Clapham-road, S.
- 1856 Harrison, George Marsh, Esq. 10, Lansdowne-road Villas, Notting-hill, W.
- 1838 Harrowby, Dudley, Earl of. Sandon-ha, Lichfield; and Norton, Gloucestershire.
- 1854 *Hartland, Frederick D., Esq., F.S.A., &c. The Oaklands, near Cheltenham.
- 1846 Harvey, W. S., Esq., R.N. H.M.S. 'Hannibal,' Mediterranean; and 40, Charing-cross, S.W.
- 1869 580 Harwood, H. Harwood, Esq. National Club, S.W.
- 1858 Hawker, Edward J., Esq. 37, Cadogan-place, W.
- 1834 Hawkins, Bisset, Esq., M.D., F.R.S. 29, Upper Harley-street, W.; and Lewell Lodge, Dorchester.
- 1857 Hawkins, Commander Frank K., R.N. Army and Navy Club, S.W.
- 1840 *Hawkins, John, Esq.
- 1858 *Hawkins, Lieut.-Col. J. Summerfield, R.E. N.W. American Boundary Commission.
- 1830 Hawtrey, Rev. Edward Craven, D.D., F.S.A. Eton College.
- 1852 *Hay, Capt. J. C. Dalrymple, R.N. 24, Prince's-gate, Hyde-park South, S.W.; and H.M.S. 'Indus.'
- 1830 *Hay, Robert Wm., Esq., F.R.S., F.S.A., &c. Blechynden-terrace, Southampton.
- 1859 Hay, Major W. E. Pitfour Castle, Perth.
- 1853 590 Hayward, Robert Newton, Esq. Porchester-villa, Grange-loan, Edinburgh.
- 1859 Heard, G. G. Gilbert, Esq., F.S.A. 18, Devonshire-terrace, Hyde-park, W.
- 1856 Heath, J. Benjamin, Esq., F.R.S., F.S.A., Consul for Sardinia. 31, Old Jewry, E.C.
- 1859 Hellmann, Christian, Esq. Club-chambers, Regent-street, S.W.
- 1859 Hely, Hovendon, Esq. Australian Club, Sydney.
- 1856 Henderson, Andrew, Esq. 21, Cambridge-street, Hyde-park-square, W.
- 1837 *Henderson, James, Esq. Littlewood-park, Forbes, Aberdeenshire.
- 1853 †Henderson, John, Esq. Valparaiso.
- 1852 Henderson, William, Esq. 5, Stanhope-street, Hyde-park-gardens, W.

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1844	*Heneage, Edward, Esq. 14, <i>William-street, Lowndes-square, S.W.</i>
1838	600*Henry, Wm. Chas., Esq., M.D., F.R.S. <i>Hastfield, near Ledbury, Herefordshire.</i>
1834	Herbert, Jacob, Esq. <i>Trinity-house, Tower-hill, E.C.</i>
1845	*Herbert, Right Hon. Sidney, M.P. 49, <i>Belgrave-sq., S.W.; and Wilton-ho., Wilts.</i>
1833	*Herbert, Vice-Admiral Sir Thomas, K.C.B. 74, <i>Cadogan-place, S.W.; and Torc Cottage, Killarney, Ireland.</i>
1857	Herd, Captain D. J. 2, <i>Norway-house, Limehouse, E.</i>
1858	Hertalett, Edward, Esq. <i>Librarium, Foreign Office, S.W.; and Belle Vue-house, Richmond, S.W.</i>
1841	Hessey, James Augustus, Esq. 26, <i>Addison-road, Kensington, W.</i>
1856	Hewitt, J. Stnes, Esq. <i>Lecturer in Battersea Training College, S.W.</i>
1858	Hewitt, Capt. J. Napier. <i>Tyr Mab Ellis, Pont-y-Priod, Glamorgan.</i>
1840	*Heywood, James, Esq., F.R.S. <i>Athenaeum Club, S.W.; and 26, Kensington Palace Gardens, W.</i>
1853	610 Hickey, Edwin A., Esq. <i>Thornicroft, near Leatherhead, Surrey.</i>
1856	Hill, Arthur Bowdler, Esq. <i>South-road, Clapham-park, Surrey, S.</i>
1857	Hill, Rev. Charles C. <i>South-road, Clapham-park, Surrey, S.</i>
1854	Hill, Lieut.-Colonel Stephen J. <i>Army and Navy Club, S.W.; and Governor and Commander-in-Chief, Sierra Leone.</i>
1858	Hinchliff, T. Woodbine, Esq. Barrister-at-Law. 5, <i>Stone-bldgs, Lincoln's-inn, W.C.</i>
1846	*Hindmarsh, Frederick, Esq. 17, <i>Bucklersbury, E.C.</i>
1846	Hobbs, J. S., Esq. 157, <i>Leadenhall-street, E.C.</i>
1855	Hobbs, Wm. Geo. Ed., Esq. <i>Master of Grammar School, Wareside, near Ware.</i>
1830	*Hobhouse, Henry William, Esq. 24, <i>Cadogan-place, S.W.</i>
1834	*Hodgkin, Thomas, Esq., M.D. 35, <i>Bedford-square, W.C.</i>
1856	620*Hedgson, Arthur, Esq. Superintendent of the Australian Agricultural Company.
1857	Hodgson, Kirkman Daniel, Esq., M.P. 8, <i>St. Helen's-place, Bishopsgate, E.C.</i>
1856	Homes, Esq., Jun. 18, <i>St. Andrew's-square, Edinburgh.</i>
1830	622 Hogg, John, Esq., M.A., F.R.S., F.L.S., Foreign Sec. R. Soc. of Literature. 8, <i>Sergeants' Inn, Temple, E.C.; and Norton-house, Stockton-upon-Tees.</i>
1839	*Holford, Robert S., Esq., M.P. <i>Dorchester-house, Park-lane, W.</i>
1830	Holland, Sir Henry, Bart., M.D., F.R.S. 25, <i>Lower Brook-street, W.</i>
1835	*Holmes, James, Esq. 4, <i>New Ormond-street, Queen-square, W.C.</i>
1839	*Holroyd, Arthur Todd, Esq., M.D., F.L.S. <i>Athenaeum Club, S.W.</i>
1857	Holroyd, Henry, Esq. Barrister-at-Law. 2, <i>Elm-court, Temple, E.C.</i>
1857	Homfray, Frederick Samuel, Esq., C.E. 13, <i>Abingdon-street, S.W.</i>
1857	630 Homfray, William Henry, Esq. 13, <i>Abingdon-street, S.W.</i>
1859	*Hood, William Charles, Esq., M.D. <i>Bethlehem Hospital, S.</i>
1830	*Hooker, Sir Wm. J., K.H., F.H. D., LL.D., F.R.S., F.S.A., &c. <i>West-park, Kew, W.</i>
1846	*Hope, Alex. James Beresford, Esq., M.P. <i>Ashlow House, Connaught-place, Hyde-park, W.; and Bedgebury-park, Hurst-green, Kent.</i>
1857	Hoper, Richard, Esq. 53, <i>Margaret-street, Cavendish-square, W.</i>
1857	†Hose, Rev. Henry J., M.A. <i>Warden of St. Paul's College University, Sydney.</i>
1853	Hoskins, George Alex., Esq. 10, <i>Gloucester-square, Hyde-park, W.</i>

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1859	Hoskyns, Chandos Wren, Esq. <i>Wroxhall Abbey, Warwickshire.</i>
1858	Hoste, Capt. Sir William, Bart., R.N. <i>United Service Club, S.W.</i>
1856	Hovell, William Hilton, Esq. <i>Goulburn, New South Wales.</i>
1853	Howard, Sir Ralph, Bart. 17, <i>Belgrave-sq., S.W.; and Bushy-park, Wicklow.</i>
1850	Howard, Samuel Lloyd, Esq. <i>Goddings, Laughton, Essex.</i>
1842	*Hubbard, J. Gellibrand, Esq. 24, <i>Prince's-gate, Hyde-park South, S.W.</i>
1857	Hughes, Capt. Sir Frederic. <i>Ely-house, Wexford.</i>
1858	Hughes, William, Esq. 48, <i>Thornhill-square, Islington, N.</i>
1858	*Hume, Edmund Kent, Esq.
1857	Hunt, Zacharias Daniel, Esq. <i>Aylesbury.</i>
1860	Huskisson, Wm. H. Tilghman, Esq. <i>Eartham, near Chichester.</i>
1858	Hutchison, Thomas J., Esq. <i>H.M.'s Consul, Bight of Biafra and Fernando Po.</i>
1851	Hyde, James Bartlet, Esq. <i>Conservative Club, S.W.</i>
1854	Isill, Benjamin, Esq. 19, <i>Campden-hill-road, W.</i>
1852	Illingworth, Richard Stonewer, Esq. 9, <i>Norfolk-crescent, Hyde-park, W.</i>
1850	*Imray, James, Esq., jun. 102, <i>Minories, E.; and Manor-park, Streatham, S.</i>
1850	Inglby, the Rev. Henry John. <i>Ripley Castle, Ripley, Yorkshire.</i>
1851	Inglefield, Captain Edward A., R.N., F.R.S. <i>United Service Club, S.W.</i>
1846	Ingram, Hughes Francis, Esq. <i>University Club, S.W.</i>
1860	*Inskip, G. H., Esq., Master R.N. 23, <i>Anne-street, Sunderland.</i>
1852	*Inskip, Rev. Robert Mills. 8, <i>Boon's-place, Plymouth.</i>
1840	*Irby, Frederick W., Esq. <i>Athenaeum Club, S.W.</i>
1853	Irving, Thomas, Esq. 14, <i>Belsize-road, St. John's-wood, N.W.</i>
1850	660 Jackson, William, Esq. 47, <i>Russell-square, W.C.</i>
1855	Jackson, William, Esq., M.P. <i>Fenton's Hotel, S.W.</i>
1857	James, Colonel Sir Henry, B.E., F.R.S. <i>Superintendent Ordnance Survey, Southampton.</i>
1850	*Janson, T. Corbyn, Esq. <i>Stamford-hill, N.</i>
1857	Jefferson, Richard, Esq. <i>Army and Navy Club, S.W.</i>
1854	Jellicoe, Charles, Esq. 23, <i>Chester-terrace, N.W.</i>
1859	Jencken, H. Diedrich, Esq. 10, <i>St. Swithin's-lane, E.C.; and 2, York-terrace, Upper Sydenham, S.E.</i>
1854	Jenkins, Capt. Griffith, I.N., C.B. <i>India; and East India Club, St. James's-square, S.W.</i>
1837	*Jenkins, R. Castle, Esq.
1851	Jennings, John, Esq., F.R.S. 7, <i>Gough-square, Fleet-street, E.C.</i>
1854	670* Jennings, William, Esq., M.A. 13, <i>Victoria-street, Westminster, S.W.</i>
1858	Jermyn, the Venerable Archdeacon Hugh Willoughby. <i>Nettlecombe Rectory, near Taunton, Somerset.</i>
1860	Jermyn, Rowland Formby, Esq. <i>War Office, S.W.</i>
1858	Johnson, Capt. Clement. <i>Carlton Club, S.W.; and 1, Whitehall, S.W.</i>
1857	Johnson, Edmund Chas., Esq. 20, <i>Arlington-street, S.W.; and 6, Savile-row, W.</i>
1859	*Johnson, Henry, Esq. 39, <i>Crutched Friars, E.C.</i>

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1854	Johnson, John Hugh, Esq. 4, <i>Stafford-place, Pimlico, S.W.</i>
1843	Johnston, Alex. Keith, Esq., F.R.S.E., Hon. Mem. Berl. Geog. Soc., etc. <i>March- hall-park; and 4, St. Andrew-square, Edinburgh.</i>
1856	Johnston, A. R., Esq. <i>Athenaeum Club, S.W.; and 25, Mount-street, W.</i>
1857	Johnston, J. Brookes, Esq. <i>Newington-terrace, Kensington-park, S.</i>
1858	680 Johnston, Capt. J. Gilbert. 8, <i>York-terrace, Regent's-park, N.W.</i>
1853	Johnstone, Sir John V. B., Bart., M.P., D.C.L. 27, <i>Grosvenor-square, W.; and Hackness-hall, near Scarborough.</i>
1858	Jones, Capt. Edward Monckton, 20th Regt. <i>Junior United Service Club, S.W.</i>
1851	Jones, Major-General Sir Harry D., R.E., K.C.B. <i>R.M. College, Farnborough Station, Hants.</i>
1857	Jones, Capt. Jenkins, Bengal Engineers. <i>Junior United Service Club, S.W.; and 1, Lennard-place, Circus-road, St. John's-wood, N.W.</i>
1840	*Kalergi, John, Esq. 23, <i>Montagu-square, W.</i>
1855	†Kane, Major Fred. A. C., 15th Regt. <i>Bombay N.I. Junior U. Service Club, S.W.</i>
1858	Kay, David, Esq. 6, <i>North Bridge, Edinburgh.</i>
1858	Keane, Edward Arthur, Lord. 17, <i>St. George's-place, Hyde-park-corner, S.W.; and Stetchworth-park, Newmarket.</i>
1857	Keating, Sir Henry Singer, Q.C., M.P., one of the Judges of the Court of Common Pleas. 13, <i>Great Queen-street, Westminster, S.W.</i>
1857	690 Keene, Rev. C. E. Ruck. <i>Swyncombe-park, Henley-upon-Thames.</i>
1845	*Kellett, Commodore Henry, R.N., C.B. <i>Clonmell, Ireland; and H.M.S. 'Imam,' Jamaica.</i>
1860	Kemball, Major Arnold Burrowes, C.B., Indian Army. <i>H.M.'s Consul-General, Bagdad; and 6, Chester-place, Hyde-park, W.</i>
1859	Kennard, Coleridge J., Esq. 26, <i>Chester-terrace, Regent's-park, N.W.</i>
1854	Kennedy, Rev. John, M.A. 4, <i>Stepney-green, E.</i>
1851	†Kent, John, Esq. <i>Shafston, Moreton Bay, Australia.</i>
1859	Key, Capt. Astley Cooper, R.N., C.B. <i>United Service Club, S.W.</i>
1857	Keysell, Francis P., Esq. <i>Sycamore Villa, 35, Carlton-hill, St. John's-wood, N.W.</i>
1846	King, Lieut.-Colonel Edward R., 36th Regt. <i>Junior United Service Club, S.W.</i>
1858	King, Rev. Samuel W., A.M. <i>Saxlingham Rectory, Norfolk.</i>
1857	700 Kinkel, Gottfried, Esq., Ph.D. 6, <i>Eastbourne-terrace, W.</i>
1857	*Kinnauld, Hon. Arthur F., M.P. 2, <i>Pall-mall East, S.W.</i>
1860	Kinns, Samuel, Esq., Phil. Dr., F.R.A.S. <i>Highbury New Park College, N.</i>
1858	†Kirk, John, Esq., M.D. <i>Livingstone Expedition.</i>
1859	Labrow, Valentine, Esq. 22, <i>Chancery-lane, W.C.</i>
1849	*Laffan, Capt. Robert Michael, R.E. <i>Army and Navy Club, S.W.; and Otham Lodge, Kent.</i>
1833	*Laird, M'Gregor, Esq. 3, <i>Mincing-lane, E.C.; and 2, Clarendon-terrace, Brighton.</i>
1860	*Lake, William, Esq. 93, <i>Inverness-terrace, Hyde-park, W.</i>
1859	Lamb, Lieut. Henry, I.N. <i>East India House, Leadenhall-street, E.C.</i>

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1838	*Lance, John Henry, Esq., F.L.S. <i>The Holmwood, Dorking.</i>
1859	710* Lange, Daniel A., Esq. 202, <i>Piccadilly, W.</i>
1856	Langler, J. R., Esq., Lecturer, Wesleyan Normal Institution. <i>Westminster, S.W.</i>
1856	Lansdowne, Henry, Marquis of, K.G., D.C.L., F.R.S. <i>Lansdowne-house, Berkeley-square, W.; Richmond-hill, Surrey, S.W.; and Bowood-park, Wilts.</i>
1833	*Larcom, Lieut.-Colonel Sir Thomas Aiskew, R.E., F.R.S. <i>Custom-house, Dublin.</i>
1859	Larnach, Donald, Esq. 21, <i>Kensington Palace Gardens, W.</i>
1855	Laroche, William Thomas, Esq. <i>Reform Club, S.W.; and Wanstead.</i>
1852	Latham, Robert Gordon, Esq., M.D., F.R.S., &c. <i>Greenford-house, Hanwell, Middlesex, W.</i>
1854	Latrobe, Ch. J., Esq. <i>Athenaeum Club, S.W.; and Whitbourne Court, Worcester.</i>
1854	Laurie, Walter, Esq. 2, <i>Princes-street, Mansion-house, E.C.</i>
1846	*Law, the Hon. H. Spencer, M.A. 1, <i>Lowndes-st., S.W.; and Ellington-h., Ramsgate.</i>
1830	720 Law, William J., Esq. 63, <i>Upper Seymour-street, W.; 33, Lincoln's-inn-fields, W.C.; and 5, Sussex-square, Brighton.</i>
1851	Lawrence, Edward B., Esq. 20, <i>King-street, Portman-square, W.</i>
1857	Layard, Austen H., Esq., D.C.L. 130, <i>Piccadilly, W.</i>
1853	*Le Breton, Francis, Esq. 21, <i>Sussex-place, Regent's-park, N.W.</i>
1856	Lee, Charles, Esq. 41, <i>Grosvenor-place, S.W.</i>
1857	Lee, George, Esq. <i>Athenaeum Club, S.W.</i>
1830	*Lee, John, Esq., LL.D., F.R.S., F.S.A., F.R.S.N.A., &c. 5, <i>College, Doctors'-commons, E.C.; and Hartwell-house, near Aylebury, Bucks.</i>
1839	Lee, Thomas, Esq. 5, <i>George-yard, Lombard-street, E.C.; and Great Barr, Staffordshire.</i>
1833	*Lefevre, Sir John George Shaw, M.A., D.C.L., F.R.S., Vice-Chancellor of the University of London. 8, <i>Spring-gardens, S.W.</i>
1858	Lefroy, Charles E., Esq. <i>Eveshot-house, Farnham, Surrey.</i>
1853	730 Lefroy, Colonel John Henry, R.A., F.R.S. 54, <i>Cambridge-terrace, Hyde-park, W.</i>
1845	Leigh, John Studdy, Esq. 7, <i>St. Stephen's-terrace, Westbourne-grove, W.</i>
1856	Lemon, Sir Charles, Bart., F.R.S., &c. <i>Carcleve, near Falmouth, Cornwall.</i>
1857	*Lenox, George-Wm., Esq. 30, <i>Bedford-square, W.C.; and Pont-y-Pridd, Glamorganshire.</i>
1855	Leslie, George F. Esq. 45, <i>Rutland-gate, Hyde-park, S.W.</i>
1859	Leslie, Patrick, Esq. 45, <i>Rutland-gate, Hyde-park, S.W.</i>
1859	Leslie, Walter D., Esq. 45, <i>Rutland-gate, Hyde-park, S.W.</i>
1840	*Letts, Thomas, Esq. 8, <i>Royal Exchange, E.C.</i>
1857	Leverson, George B. C., Esq. 19, <i>Bloomsbury-square, W.C.</i>
1859	Levinsohn, Louis, Esq. 7, <i>Finsbury-square, E.C.</i>
1859	740 Lewis, Rev. Evan, B.A. <i>Rothwell, Northamptonshire.</i>
1858	Lewis, Rev. Henry, M.A. <i>St. Paul's Church-buildings, Clapham-common, S.</i>
1852	Leycester, Commander Edmund M., R.N. <i>Messrs. Chard, 3, Clifford's-inn, E.C.</i>
1857	Liardet, Capt. Francis, R.N. <i>Royal Hospital, Greenwich, S.E.</i>
1859	Lichfield, Thomas George, Earl of. <i>Shugborough, Staffordshire.</i>
1860	Lindsay, H. Hamilton, Esq. 22, <i>Berkeley-square, W.</i>

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- 1857 Lindsay, Colonel the Hon. J., Gren. Guards, M.P. 20, Portman-square, W.
 1855 *Lindsay, Wm. S., Esq., M.P. 17, Portland-place, W.; and Manor House,
 Shepperton, Middlesex.
- 1858 Lister, John, Esq., M.D. 6, Porchester-terrace, Hyde-park, W.
- 1857 *Lloyd, George A., Esq. 2, Royal Exchange-buildings, E.C.
- 1859 750 Loch, Henry B., Esq. 11, Brook-street, W.
 Loch, William Adam, Esq. 8, Great George-street, Westminster, S.W.
- 1852 Locke, Joseph, Esq., M.P., F.R.S., M. Inst. Civil Engineers. 13, Duke-street,
 Westminster, S.W.; and 23, Lowndes-square, S.W.
- 1858 Lockhart, William, Esq., F.R.C.S. Park-villas, Grangeville-park, Blackheath, S.E.
- 1856 *Logan, Sir William Edmond, F.R.S. Montreal, Canada.
- 1855 Login, Sir John, Surgeon E. I. C. Service. Church House, Kee, S.W.
- 1860 Londesborough, Wm. Henry Forester, Lord. 8, Carlton-house-terrace, S.W.
- 1830 Long, George, Esq., M.A. 22, Buckingham-street, Brighton.
- 1839 *Long, Henry L., Esq. Travellers' Club, S.W.; and Hampton-lodge, Farnham,
 Surrey.
- 1857 *Long, W. Beeston, Esq. 4, Great Cumberland-place, W.
- 1858 760 Longden, Morrell D., Esq. 4, Ennismore-place, Hyde-park, S.W.
- 1847 Longman, Thos., Esq. Paternoster-row, E.C.; and 8, Sussex-sq., Hyde-park, W.
- 1858 Longman, William, Esq. 36, Hyde-park-square, W.
- 1856 Lovett, Phillips Cosby, Esq. Liscombe-house, Liscombe, near Leighton Buzzard,
 Bucks.
- 1858 Lowden, Rev. George Rouse. 12, Leinster-gdns., Hyde-park, W.; and Uxbridge.
- 1859 Lowe, Capt. W. Drury, A.D.C. to Inspector-General of Cavalry. Burlington-hotel,
 Cork-street, W.
- 1830 Lowry, Joseph Wilson, Esq. 45, Robert-street, Hampstead-road, N.W.
- 1830 *Lyell, Sir Charles, M.A., LL.D., F.R.S. 53, Harley-street, Cavendish-square, W.
- 1837 *Lynch, Capt. H. Blosse, c.b., Indian Navy, F.R.A.S. Athenaeum Club, S.W.
- 1858 Lyne, Francis, Esq. 13, Bristol-gardens, Maida-hill, W.
- 1830 770 MacDonnell, John, Esq. 48, Grove-end-road, St. John's-wood, N.W.
- 1858 MacDougall, Alex. H., Esq. 44, Parliament-street, Westminster, S.W.
- 1859 McGrath, John C., Esq. Reform Club, S.W.
- 1856 Macgregor, Alexander, Esq. 19, Sussex-gardens, Hyde-park, W.
- 1855 McGregor, Duncan, Esq. Board of Trade, S.W.; and Athenaeum Club, S.W.
- 1839 Macintosh, Lieut.-General Alex. Fisher, K.H. 7, Tilney-street, Park-lane, W.
- 1845 *Macintyre, Patrick, Esq., F.S.A., Off. Assoc. Inst. Act. 8, Waterloo-place,
 Pall-mall, S.W.; and 13, Greville-place, Kilburn-priory, W.
- 1859 Mackay, Rev. Alexander, A.M. Rhynie, Aberdeenshire.
- 1860 Mackay, Thomas Miller, Esq. 8, Park-hill-road, Liverpool.
- 1859 *Mackean, Thos. W. L., Esq. 24, Oxford-square, Hyde-park, W.
- 1845 780 Mackenzie, Right Hon. Holt, F.R.A.S. Athenaeum Club, S.W.; and 28, Wimpole-
 street, W.
- 1858 McKerrell, Robert, Esq. Mauritius.

Year of Election.	
1830	Mackillop, James, Esq., F.R.A.S. 30, Grosvenor-st., W.
1835	Mackinnon, Wm. Alex., Esq., M.P., F.R.S. 4, Hyde-park-place, W.
1859	Maclear, Thomas, Esq. Astronomer Royal, Cape of Good Hope.
1859	MacLeay, George, Esq. Athenaeum Club, S.W.; and Sydney.
1852	McLeod, J. Lyons, Esq., late Consul for Mozambique.
1852	McLeod, Walter, Esq. Head Master of the Royal Military Asylum, Chelsea, S.W.
1855	MacLure, Andrew, Esq. 37, Walbrook, E.C.
1855	*McClure, Captain Sir Robert J. Le M., R.N. H.M.S. 'Essex.'
1855	790 Macnab, John, Esq. Stead's-place, Leith-walk, Edinburgh.
1839	M'Neil, The Right Hon. Sir John, G.C.B. Granton, near Edinburgh.
1856	*Macpherson, Duncan, Esq., M.D. Inspector-General of Hospitals. Madras.
1845	Macqueen, James, Esq. 43, Kensington-square, W.
1830	*Magrath, Edward, Esq. Hampstead-heath, N.W.
1853	Majendie, Ashurst, Esq., F.R.S. Athenaeum Club, S.W.; 152, Albemarle-street, Regent's-park, N.W.; and Hedingham-castle, Essex.
1845	*Major, Richard Henry, Esq. British Museum, W.C.
1858	Malby, John Walter, Esq. 8, Sclater-street, Gray's-inn-road, W.C.
1853	*Malby, Thomas, Esq. 2, Park-villas, Seven Sisters-road, Holloway, N.
1843	*Malcolm, W. E., Esq. Burnfoot, Langholme, near Carlisle.
1853	800* Mallet, Charles, Esq. Audit Office, W.C.; and Belmont, Hampstead, N.W.
1836	*Manchester, James Prince Lee, Bishop of, F.R.S., &c. Athenaeum Club, S.W.; and Sedgley-hall, Manchester.
1856	Mandeville, J. Henry, Esq., late H.M.'s Minister Plenipotentiary at Buenos Ayres. 11, Rutland-gate, S.W.
*	
1830	*Mangles, Capt. James, R.N., F.R.S. Fairfield, near Exeter.
1856	Manning, Frederick, Esq. Byron-lodge, Leamington.
1859	Mantell, Wm. Walter, Esq. 47, Mount-street, Grosvenor-square, W.
1859	Marett, Charles, Esq., M.A. Barrister-at-Law. 56, Chancery-lane, W.C.
1859	Margesson, Capt. Philip D., R.A. 4, Green's-road, Chelsea, S.W.
1830	*Marjoribanks, Edward, Esq. 34, Wimpole-street, W.
1854	Markham, Clements Robert, Esq. 21, Eccleston-square, S.W.
1836	810* Markham, Edward, Esq. 45, Welbeck-street, Cavendish-square, W.
1857	Marlborough, George, Duke of. Blenheim, Woodstock.
1857	*Marsden, Robert C., Esq. 14, Hanover-terrace, Regent's-park, N.W.
1857	Marsh, Matthew Henry, Esq., M.P. Oxford and Cambridge Club, S.W.
1854	Marshall, James Garth, Esq. Headingley, near Leeds, Yorkshire; and Monk Coniston, Ambleside.
1859	*Marsham, the Hon. Robert. The Mote, Maidstone, Kent.
1857	Marshman, J. C., Esq. 7, Kensington-palace-gardens, W.
1857	Martin, Francis P. B., Esq.
1849	Martin, R. Montgomery, Esq. 23, Gloucester-street, Camden-hill, Kensington, W.
1859	Martin, Rr.-Admiral Sir H. Byam, K.C.B. 16, Carlton-house-terrace, S.W.
1830	820* Martineau, Joseph, Esq., F.L.S., F.R.S. Athenaeum Club, S.W.; Basing-park, Alton, Hants; and Whitbread's Brewery, E.C.

Year of Elect. ion.	
1845	*Matheson, Sir James, Bart., M.P., F.R.S. 13, Cleveland-row, S.W.; and Achany, Bonar-bridge, Sutherlandshire, &c.
1858	Mathieson, James Ewing, Esq. 77, Lombard-street, E.C.; and 16, Queen's-gardens, Bayswater, W.
1837	*Maughan, Captain P., Indian Navy, F.R.A.S. 37, Melville-street, Edinburgh.
1855	May, Daniel John, Esq., R.N. H.M.S. "Flying Fish."
1858	Mayer, Joseph, Esq., F.R.A. 68, Lord-street, Liverpool.
1858	Mayo, John Pole, Esq. Army and Navy Club, S.W.
1860	*Meinertzhagen, Daniel, Esq. 10, Moorgate-street, E.C.; and 28, Devonshire-place, Portland-place, W.
1854	Melvill, Colonel Peter M., Military Secretary to the Bombay Government. 80, Eaton-place, S.W.
1838	Melvill, Philip, Esq., F.R.A.S. East India House, E.C.
1842	830*Merivale, Herman, Esq., Under Sec. of State for the Colonies. Colonial Office, and 26, Westbourne-terrace, W.
1854	Methuen, Captain Robert. Oriental Club, W.
1859	Miland, John, Esq. 4, Mount-street, Berkeley-square, W.
1853	*Miller, Captain Thomas, R.N. H.M.S. "Clio"; and United Service Club, S.W.
1857	Mills, Arthur, Esq., M.P. 34, Hyde-park-gardens, W.
1845	Milne, Alexander, Esq., C.B., Commissioner of Woods and Forests. 29, St. James's-place, S.W.
1853	Milnes, Richard Monckton, Esq., M.P. 16, Upper Brook-street, W.; The Hall, Buxtry; and Fryston-hall, Ferribridge, Yorkshire.
1837	*Milton, William Thomas, Viscount. 4, Grosvenor-square, W.; and Wentworth-house, Rotherham, Yorkshire.
1860	Mitchell, Alexander, Esq. 6, Great Stanhope-street, Park-lane, W.
1859	Mitchell, William, Esq. 54, Gracechurch-street, E.C.
1851	840*Mocatta, Frederick D., Esq. 35, Gloucester-place, Portman-square, W.
1853	Mocatta, George, Esq. Sydney.
1858	Moffat, Robert, Esq. Government Surveyor, Hope Town and Kuruman, Cape of Good Hope.
1853	Moffatt, George, Esq. 103, Eaton-square, S.W.
1860	*Molson, Thomas, Esq. 1, Molson-terrace, Montreal, Canada.
1842	*Montagu, Major Willoughby. Clapham-common, S.
1842	*Monteagle, Thomas, Lord, F.R.S. 7, Park-street, Westminster, S.W.; and Mount Trenchard, Limerick.
1830	*Montefiore, Sir Moses, Bart., F.R.S., F.R.S.N.A. 7, Grosvenor-gate, Park-lane, W.; and East Cliff-lodge, Ramsgate.
1830	*Monteith, Lieut.-General William, E.I.C. Eng., F.R.S. 11, Upper Wimpole-street, W.; and Oriental Club, W.
1859	Montgomerie, F. Butler, Esq. 2, Cleveland-row, St. James's, S.W.; and St. Leonard's-on-Sea.
1859	850†Montgomerie, Capt. T. G., Bengal Engineers, 1st Assist. Trigonometrical Survey. Dehra Dun.
1860	Montgomery, Robert Martin, Esq. 6, Ashley-place, Victoria-street, S.W.

Year of
Election.

- 1839 *Moody, Lieut.-Colonel R. C., R.E. *British Columbia; and Junior United Service Club, S.W.*
- 1859 Moon, William, Esq. 104, Queen's-road, Brighton.
- 1857 *Moor, Rev. Allen P., M.A., F.R.A.S. *Sub-Warden St. Augustine College, Canterbury.*
- 1854 Moore, Major J. A., F.R.S. 19, Portland-place, W.
- 1857 Moore, Captain John, R.N., c.b. *H.M.S. 'Hogue,' Greenock.*
- 1857 Moore, Major-General W. Y. *United Service Club, S.W.*
- 1839 *Morris, Charles, Esq. *Unicity Club, S.W.*
- 1858 Mudie, Charles Edward, Esq. 13, Russell-square, W.C.
- 1855 860 Muir, Thomas, Esq. 24, York-terrace, Regent's-park, N.W.
- 1858 Mueller, Ferdinand, Esq., M.D., PH. DR. *Director of the Botanical Gardens, Melbourne.*
- 1850 *Murchison, Sir Roderick Impey, G.C.S.T.S., M.A., D.C.L., V.P.R.S., G.S., and L.S., Director-General of the Geological Survey of Great Britain and Ireland, Trust. Brit. Mus., Hob. Mem. R.S. of Ed., R.I.A., Mem. Acad. St. Petersburg, Berlin, Stockholm, Brussels, and Copenhagen, Corr. Ins. Fr., etc. etc. 16, Belgrave-square, S.W.; and 28, Jermyn-street, S.W.
- 1859 Murchison, Capt. Kenneth R. Bath.
- 1850 *Murdock, Thomas W. C., Esq. 8, Park-street, Westminster, S.W.; and Riverbank, Putney, S.W.
- 1851 Murray, George, Esq.
- 1860 Murray, George T., Esq. *Shrivenham House, Shrivenham, Berks.*
- 1851 *Murray, Capt. the Hon. Henry Anthony, R.N. 4D, Albany-chambers, Piccadilly, W.
- 1844 *Murray, James, Esq. *Foreign Office, S.W.*
- 1850 Murray, John, Esq. 50, Albemarle-street, W.; and Newstead, Wimbledon, S.W.
- 1853 870 Napier, Col. George Thomas Conolly, c.b., Assistant Adjutant-General. *Junior United Service Club, S.W.*
- 1857 Napier, Hon. William. 22, Green-street, Grosvenor-square, W.
- 1857 Nares, Francis, Esq. *Athenaeum Club, S.W.*
- 1859 *Nasmyth, Capt. David J., 1st Assist. Trigonometrical Survey. *Bhoj, Bombay Presidency.*
- 1857 Nelthropp, George, Esq. 20, Gloucester-street, Belgrave-road, S.W.
- 1857 *Nesbitt, Henry, Esq. 8, Hornsey-row, Canonbury, Islington, N.
- 1859 *Newcastle, Henry Pelham-Clinton, Duke of. 20, Portman-square, W.; Clumber-park, Worksop Manor; and Nottingham Castle, Notts.
- 1856 Newman, Thomas Holdsworth, Esq. 14, Arlington-street, S.W.
- 1856 Nicholson, Sir Charles, Bart., D.C.L., Chancellor of the University, Sydney. 65, Cornhill, E.C.
- 1844 †Nicolay, Rev. Chas. G. Bahis.
- 1856 880 Nicolson, Capt. Sir Frederick William Erskine, Bart., R.N. 14, William-street, Lombard-square, S.W.
- 1858 Nix, John H., Esq. 77, Lombard-street, E.C.

Year of
Election.

- 1857 Noddall, C. T. A., Commander R.N., Master Attendant at the Royal Clarence Victualling Yard, Gosport.
- 1857 *Nolloth, Captain Matthew S., R.N. United Service Club, S.W.; and Peckham, Surrey, S.E.
- 1856 North, Frederic, Esq., M.P. 3, Victoria-street, Westminster, S.W.; and Hastings-lodge, Hastings.
- 1830 *Northumberland, Algernon, Duke of, Vice-Admiral, K.G., F.R.S., F.R.A.S., F.R.S.S.A., Pres. R.I. Northumberland-house, Charing-cross, S.W.; Alnwick and Keildon Castles, Northumberland; Werrington-park, Cornwall; Sion-house, Middlesex, W.; and Stanwick-park, Yorkshire.
- 1858 *Oakley, R. Banner, Esq. Oswaldkirk-hall, Yorkshire.
- 1855 O'Byrne, Robert, Esq. 9, Adelphi-terrace, Strand, W.C.
- 1856 O'Byrne, W. R., Esq. 9, Adelphi-terrace, Strand, W.C.; and Cranford, Middlesex.
- 1856 O'Connor, Col. Luke Smyth, C.B., Governor of the Gambia. United Service Club, S.W.
- 1858 890 Ogilvie, Edward D., Esq.
- 1859 Ogle, John W., Esq., M.D. 13, Upper Brook-street, W.
- 1855 Oliphant, Laurence, Esq. Athenaeum Club, S.W.
- 1853 Oliveira, Benjamin, Esq., F.R.S. 8, Upper Hyde-park-street, W.
- 1845 *Ommanney, Capt. Erasmus, R.N., F.R.A.S. 40, Charing-cross, S.W.
- 1838 *Ommanney, H. M., Esq. Blackheath, S.E.
- 1856 O'Reilly, Commr. Montagu F., R.N. 4, Broad-street, Greenwich, S.E.; and H.M.S. 'Lapwing,' Mediterranean.
- 1853 Osborn, Sir George R., Bart. Travellers' Club, S.W.; and Chicksand-priory, Beds.
- 1856 Osborn, Capt. Sherard, R.N., C.B., Officier de Légion d'Honneur, etc. Hanwick, Lincolnshire.
- 1852 Oswell, William Cotton, Esq. Burlington Hotel, Cork-street, W.
- 1860 900 Otter, Charles, Esq. 13, Leinster-gardens, Hyde-park, W.
- 1855 Otway, Arthur John, Esq. 18, Chapel-street, Park-lane, W.
- 1854 †Ouchterlony, James, Esq. Madras.
- 1860 *Ouvry-North, the Rev. J. East Acton, Middlesex, W.
- 1844 *Overstone, Samuel, Lord, M.A., M.R.I. 2, Carlton-gardens, S.W.; and Wickham-park, Surrey.
- 1854 Oxenham, Rev. William, M.A. Harrow, Middlesex, N.W.
- 1846 *Oxford, Samuel Wilberforce, Bishop of, F.R.S., F.R.A. 26, Pall-mall, S.W.; Cuddesdon Palace, Wheatley, Oxfordshire; and Lexington, Sussex.
- 1852 Packman, Fred. W. S., Esq., M.D. 12, Clarges-street, Piccadilly, W.; and Cupton-hall, Chesterfield, Derbyshire.
- 1853 Pakington, Right Hon. Sir John Somerset, Bart., M.P. 41, Eaton-square, S.W.; and Westwood-park, Droitwich, Worcestershire.
- 1856 †Palliser, Captain John. British North American Expedition; Comrah, Killmackthomas, Waterford; and National Club, Whitehall-gardens, S.W.

Year of
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1855	910 Palmer, Major Edm., R.A. 3, Wellington-terrace, Charlton, Blackheath, S.E.
1838	*Palmer, Samuel, Esq.
1851	Palmerston, Henry John, Lord Viscount, M.P., K.G., G.C.B., F.M.S., &c. Cambridge-house, Piccadilly, W.; and Broadlands, Romsey, Hants.
1849	*Parish, Commr. John E., R.N. H.M.S. 'Ardent'; Army and Navy Club, S.W.; and Quarry-house, St. Leonard's-on-Sea.
1833	*Parish, Sir Woodbine, K.C.H., F.R.S., &c. Quarry-house, St. Leonard's-on-Sea.
1852	Parker, J. William, Esq., jun. 445, West Strand, W.C.
1850	†Parkes, Harry S., Esq., c.b. Oriental Club, W.; and H.B.M.'s Consul at Amoy, China.
1850	*Parkyns, Mansfield, Esq., F.Z.S. Arthur's Club, St. James's-street, S.W.; and Woodborough-hall, Southwell.
1854	Parr, Thomas Clements, Esq., M.A. 21, West-mall, Clifton.
1830	*Pasley, Sir Charles William, K.C.B., R.E., F.R.S., Lieut.-Gen. 12, Norfolk-crescent, Hyde-park, W.
1859	920 Pasteur, Marc Henry, Esq. 20, Chester-street, S.W.
1857	†Paton, Andrew A., Esq. H.B.M.'s V.-Consul, Misolonghi, Greece.
1858	Paul, Joseph, Esq. Ormonde-house, Ryde, I. of Wight.
1847	*Paynter, William, Esq., F.R.A.S. 21, Belgrave-square, S.W.; and Camborne-house, Richmond, Surrey, S.W.
1855	Peabody, George, Esq. 22, Old Broad-street, E.C.
1853	Pencock, George, Esq. Starcross, near Exeter.
1860	*Peck, Henry William, Esq. Wimbledon-house, S.W.
1853	*Peckover, Alexander, Esq. Wisbeach.
1858	Peel, Sir Robert, Bart., M.P. 8, Belgrave-square, S.W.; and Drayton Manor, Tamworth.
1846	*Pelly, Sir John Henry, Bart. Upton, Essex.
1830	930 *Penn, Richard, Esq., F.R.S. 6, Lancaster-place, Richmond, S.W.
1853	Percy, Colonel the Hon. Hugh M. (Guards). 8, Portman-square, W.
1859	Perry, Sir Erskine, Member Indian Council. 36, Eaton-place, S.W.
1859	Perry, William, Esq., H.M.'s Consul, Panama. Athenaeum Club, S.W.
1846	Petermann, Augustus, Esq., Ph. Dr., Hon. Memb. Berl. Geog. Soc. Gotha.
1857	*Peters, William, Esq. 35, Nicholas-lane, Lombard-street, E.C.
1860	Petherick, John, Esq., H.M.'s Consul, Khartum. 8, Cork-street, W.
1858	Peto, Sir S. Morton, Bart., M.P. 12, Kensington-park-gardens, W.
1860	Petrie, Captain Martin, 14th Regiment. 4, New-street, Spring-gardens, S.W.
1854	Phelps, William, Esq. 18, Montagu-place, Russell-square, W.C.
1857	940 Phillimore, Capt. Augustus, R.N. Shiplake House, Reading; and U.S. Club, S.W.
1859	Phillimore, Charles Bagot, Esq. India House, E.C.
1843	Phillimore, John George, Esq., Q.C. 19, Old-buildings, Lincoln's-inn, W.C.; and 21, Chester-square, S.W.
1860	Phillimore, Wm. Brough, Esq., late Capt. Grenadier Guards. University Club, S.W.; and Hull, Yorkshire.
1830	*Phillipps, Sir Thomas, Bart., M.A., F.R.S., F.S.A. Athenaeum Club, S.W.; and Middle-hill, Broadway, Worcestershire.

Year of Election.	
1854	Phillips, Major-General Sir B. Travell. <i>United Service Club, S.W.</i>
1856	Phillips, John, Esq., Solicitor. <i>Hastings.</i>
1854	Phillips, T. Bacon, Esq. <i>36, Lansdowne-place, Brighton.</i>
1859	Phinn, Thomas, Esq., Q.C. <i>50, Pall Mall, S.W.</i>
1852	*Pike, Lieut.-Commander John W., R.N. <i>26, Burlington-street, W.; Junior United Service Club, S.W.</i>
1855	950 Pilkington, James, Esq., M.P. <i>Reform Club, S.W.; and Blackburn.</i>
1851	*Pim, Commander Bedford C. T., R.N. <i>Junior United Service Club, S.W.; and H.M.S. "Gorgon."</i>
1858	Pincott, James, Esq. <i>University College, London, W.C.; and Christchurch-road, Rodpell-park, Brixton-hill, S.</i>
1859	Pinney, Colonel William, M.P. <i>30, Berkeley-square, W.</i>
1858	Platen, His Excellency Count, Minister Plenipotentiary, Sweden and Norway. <i>49, Grosvenor-place, S.W.</i>
1860	Plowden, Charles Hood C., Esq. <i>15, York-street, Portman-square, W.</i>
1856	*Plowes, John Henry, Esq. <i>39, York-terrace, Regent's-park, N.W.</i>
1834	*Pocock, John I., Esq. <i>Puckrup-hall, Tewkesbury.</i>
1855	*Pollexfen, Capt. J. J. <i>India.</i>
1837	*Pollington, John Charles George, Viscount, F.R.A.S. <i>Messley-park, near Leeds.</i>
1853	960 Pollock, Lieut.-General Sir George, G.C.B. <i>Clapham-common, Surrey, S.</i>
1835	*Ponsonby, Hon. Frederick G. B. <i>3, Mount-street, Grosvenor-square, W.</i>
1857	Pope, Captain W. A. <i>14, St. James's-square, S.W.</i>
1853	Porter, Edwd., Esq. <i>Athenaeum Club, S.W.; and 26, Suffolk-st., Pall-mall, S.W.</i>
1855	Porter, Rev. J. Leslie, A.M. <i>Meadow Bank, Carrickfergus, Ireland.</i>
1830	*Portlock, Maj.-General Joseph E., R.E., F.R.S. <i>War Department, 1, Whitehall-yard, S.W.; and 58, Queen's-gardens, Hyde-park, W.</i>
1859	Pottinger, Lieut.-Colonel William. <i>Junior United Service Club, S.W.</i>
1852	†Powell, Lewis, Esq. <i>Port Lewis, Mauritius.</i>
1859	Power, E. Rawdon, Esq. <i>Parthenon Club, S.W.</i>
1854	†Power, John, Esq. <i>25, Sussex-place, Regent's-park, N.W.; and Panama.</i>
1854	970 Power, John Arthur, Esq., M.A., B.M. <i>52, Burton-crescent, W.C.</i>
1856	Powys, the Hon. Thos. L. <i>10, Grosvenor-place, S.W.; and Langdon Court, Plymouth.</i>
1853	Price, Jas., Esq., M.D., F.R.C.S., &c. <i>Effra-road, Brixton, Surrey, S.</i>
1852	Price, James Glenie, Esq., Barrister-at-Law. <i>14, Clement's-inn, W.C.</i>
1859	Price, Capt. R. Havard, 31st Bengal N. Infantry. <i>Bengal.</i>
1860	Prickett, Rev. Thomas William. <i>University Club, S.W.; and Hull, Yorkshire.</i>
1855	*Pringle, Thomas Young, Esq. <i>14, Eaton-square, S.W.</i>
1845	Prinsep, Henry T., Esq. <i>Little Holland-house, Kensington, W.</i>
1859	Pritchard, Wm. Thos., Esq. <i>H.B.M.'s Consul, Fiji.</i>
1852	Prout, John William, Esq., M.A., Barrister-at-Law. <i>Athenaeum Club, S.W.; and Newson-house, Willesden, Middlesex, N.W.</i>
1844	980 Puller, Christopher W., Esq., M.P. <i>Athenaeum Club, S.W.; and Youngsbury, Ware, Herts.</i>

*List of Fellows of the*Year of
Election.

- 1857 *Purcell, Edward, Esq., LL.D. 14, Croom's-hill, Greenwich, S.E.
 1859 Purdon, Wm. H., Esq., Executive Engineer, Punjab. 94, Wimpole-street, W.
 1854 *Quin, Rear-Admiral Michael. Senior U.S. Club, S.W.; and 18, Albion-villas, Albion-road, Islington, N.
 1858 *Radstock, Graville Augustus, Lord. 26, Portland-place, W.
 1853 Rae, John, Esq., M.D. 4, Fenchurch-street, E.C.; and Canada.
 1859 Raikes, Henry, Esq., M.A. Llangwin Hall, Mold, Flintshire.
 1851 *Ramsay, Rear-Admiral Wm., C.B., F.R.A.S. Junior U.S. Club, S.W.; and 23, Ainslie-place, Edinburgh.
 1859 Ratcliff, Charles, Esq., F.S.A. National Club, S.W.; Edgbaston, Birmingham; and Downing College, Cambridge.
 1846 Ravenshaw, E. C., Esq., M.R.A.S. Oriental Club, W.; and 40, Harley-street, Cavendish-square, W.
 1859 990 Ravenstein, Ernest G., Esq. Topographical Dépôt, Spring-gardens, S.W.
 1844 *Rawlinson, Maj.-General Sir Henry C., K.C.B., D.C.L., F.R.S., Her Majesty's Minister Plenipotentiary, Persia. Athenaeum Club, S.W.
 1838 Rawson, Rawson Wm., Esq., C.B., Colonial Secretary. Cape of Good Hope.
 1852 Raymond, Ven. Archdeacon, of Durham. Athenaeum Club, S.W.; 17, Cumberland-street; and Durham.
 1857 Reed, William, Esq. Oak Lodge, Addison-road, Kensington, W.
 1858 †Rees, L. E. R., Esq. Longman and Co., Paternoster-rose, E.C.
 1859 Reeve, John, Esq. Conservative Club, S.W.
 1856 Reid, Henry Stewart, Esq. Bengal Civil Service.
 1857 Reid, Lestock R., Esq. Athenaeum Club, S.W.; and 122, Westbourne-ter., W.
 1830 *Rennie, George, Esq., C.E., F.R.S., Hon. M.R.I.A. 39, Wilton-crescent, Belgrave-square, S.W.; and Holmewood-lodge, near Dorking, Surrey.
 1830 1000 *Rennie, Sir John, C.E., F.R.S., F.S.A. 5a, Spring-gardens, S.W.
 1834 *Rennie, M. B., Esq., C.E. 39, Wilton-crescent, Belgrave-square, S.W.
 1830 *Renouard, Rev. George Cecil, B.D., M.R.A.S. Scanscombe-rectory, near Dartford.
 1830 *Renwick, Lieutenant, R.E.
 1858 Reynardson, Henry Birch, Esq. Adscott, near Telsworth, Oxfordshire.
 1857 Richards, Capt. George H., R.N. H.M.S. 'Plumper,' Pacific; and Torpoint, Cornwall.
 1830 *Richardson, Sir John, R.N., M.D., C.B., F.R.S. Lancriggy, Grasmere, Westmoreland.
 1850 Rich, Henry, Esq., M.P. 28, Chapel-street, Grosvenor-square, W.
 1859 Rickards, Henry Edward, Esq. Drayton House, West Drayton, Middlesex.
 1830 *Robe, Col. Fred. Holt, C.B. U.S. Club, S.W.; and Woolwich-common, S.E.
 1860 1010 Robertson, D. Brooke, Esq., H.M.'s Consul, Canton. St. James's Club, S.W.
 1830 *Robinson, Captain Charles G., R.N. 16, Delamere-ter., Upper Westbourne-terrace, W.
 1859 Robinson, Capt. D. G. Staff of the Great Trigonometrical Survey, Rawal Pindi, Punjab.
 1859 Robinson, Sir Hercules G. P. Governor of Hong Kong.

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1855	Robinson, Thos. Fleming, Esq., F.L.S. 2, <i>Horatio-terrace, Ormeau-road, Old Kent-road, S.E.</i>
1850	*Robinson, Walter F., Esq., Lieut. R.N. <i>Junior United Service Club, S.W.</i>
1856	Roche, Antonin, Esq. <i>Educational Institute, Cadogan-gardens, Sloane-st., S.W.</i>
1830	*Rodd, James Rennell, Esq. 40, <i>Wimpole-street, W.</i>
1830	*Roget, Peter M., Esq., M.D., F.R.S. 18, <i>Upper Bedford-place, Russell-st., W.C.</i>
1834	*Rose, the Right Hon. Sir George, F.R.S., LL.D. 4, <i>Hyde-park-gardens, W.;</i> and 25, <i>Southampton-buildings, Chancery-lane, W.C.</i>
1857	1020*Rose, Wm. A. Esq., Alderman. 63, <i>Upper Thames-street, E.C.;</i> and <i>Befions, Crawford.</i>
1830	Ross, Charles, Esq. 60, <i>Portland-place, W.</i>
1857	Ross, John, Esq., M.A. 2, <i>Brabant-court, Philpot-lane, E.C.</i>
1844	*Rosse, William, Earl of, M.A., F.R.S. <i>Birrcastle, Parsonstown, King's County, Ireland.</i>
1839	*Rous, Vice-Admiral the Hon. Henry John. 13, <i>Berkeley-square, W.</i>
1859	Rowden, Rev. G. Croke. <i>Oak Lawn, Weybridge.</i>
1856	Rucker, J. Anthony, Esq. <i>Blackheath, S.E.</i>
1858	*Russell, Arthur John Edward, Esq., M.P. 2, <i>Audley-square, W.</i>
1830	*Russell, Jesse Watts, Esq., D.C.L., F.R.S. <i>Ham-hall, Staffordshire.</i>
1830	Russell, Lord John, M.P., F.R.S. 37, <i>Chesham-place, S.W.;</i> <i>Pembroke-lodge, Richmond, S.W.;</i> <i>Endsleigh-ho., Devon;</i> and <i>Gart-ho., near Callendar, N.B.</i>
1860	1030Russell, Wm. Howard, Esq., LL.D. 18, <i>Summer-place, Onslow-square, S.W.</i>
1860	Rutherford, John, Esq. 2, <i>Cavendish-place, Cavendish-square, W.</i>
1857	*Ryder, Capt. Alfred P., R.N. <i>U.S. Club, S.W.;</i> and <i>Launde Abbey, Uppingham.</i>
1858	Ryder, John Northcote, Esq. <i>Messrs. Penn and Co., Greenwich.</i>
1852	Sabine, Major-General Edw., R.A., V.P.R.S., F.R.A.S., &c. &c. 13, <i>Ashley-place, Victoria-street, Westminster, S.W.;</i> and <i>Woolwich, S.E.</i>
1847	St. Asaph, Thomas Vowler Short, Bishop of. <i>Palace, St. Asaph, North Wales.</i>
1857	St. David's, Connop Thirlwall, Bishop of. <i>Abergwilly Palace, Carmarthen.</i>
1840	St. Leger, Anthony B., Esq. 10, <i>Berkeley-square, W.;</i> and 22, <i>Baker-street, Portman-square, W.</i>
1857	St. Vincent, Edward, Viscount. <i>Meaford Stone, Staffordshire.</i>
1845	*Salomons, David, Esq., M.P., Alderman, F.R.A.S. 3, <i>Great Cumberland-place, Hyde-park, W.;</i> and <i>Broom-hill, near Tunbridge Wells.</i>
1860	1040Sarel, Major H. A., 17th Lancers. <i>Army and Navy Club, S.W.</i>
1852	Saumarez, Captain Thomas, R.N. <i>Army and Navy Club, S.W.;</i> and <i>Green-hill, Barnet, N.</i>
1838	Scarlett, Lieut.-General the Hon. Sir J. Yorke, K.C.B. <i>Portsmouth.</i>
1851	Scarlett, Lt.-Col. the Hon. W. F., Scots Fusilier Guards. 70, <i>Jermyn-st., S.W.</i>
1859	Scott, Lord Henry. <i>Belgrave-square, S.W.</i>
1855	Scott, Rear-Admiral James, c.b. <i>United Service Club, S.W.</i>
1840	*Scrivener, J. F. P., Esq. 20, <i>Bryanston-square, W.;</i> and <i>Ramridge-house, near Andover, Hants.</i>

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Election.

1830	*Sedgwick, the Rev. A., Woodwardian Lecturer, M.A., F.R.S. <i>Athenaeum Club, S.W.; and Cambridge.</i>
1838	*Seroold, Charles P., Esq. <i>Bretby, Liquorpond-street, E.C.</i>
1853	Sevin, Charles, Esq. <i>148½, Fenchurch-street, E.C.</i>
1853	†Sewell, Henry, Esq. <i>75, Old Broad-st., E.C.; and Stamford-hill, N.</i>
1853	Sexton, George, Esq., M.D., PH. DR. <i>3, Broughton-place, Hackney-road, E.</i>
1858	Seymour, George, Esq. <i>17, Gracechurch-street, E.C.; and 11, Leinster-gardens, Hyde-park, W.</i>
1855	Seymour, Admiral Sir Geo. F., K.C.B., G.C.H. <i>115, Eaton-square, S.W.</i>
1853	*Seymour, Henry Danby, Esq., M.P. <i>39, Upper Grosvenor-street, W.; Knole-Hindon, Wilts; and Glastonbury, Somersetshire.</i>
1854	*Shadwell, Captain Charles F. A., R.N., C.B. <i>H.M.S. "Highflyer."</i>
1856	Share, James Masters, Esq., R.N. <i>H.M.S. "Calcutta," East Indies; and Front-street, Tynemouth, Northumberland.</i>
1858	Shea, John, Esq., M.D., Surgeon R.N. <i>84, Blackfriars-road, S.</i>
1846	Sheffield, George A. F. C., Earl of. <i>20, Portland-place, W.; and Sheffield-park, Sussex.</i>
1857	Shell, Major-Gen. Sir Justin, K.C.B. <i>13, Eaton-place, Belgrave-square, S.W.</i>
1857	†Shelburne, Henry, Earl of. <i>Lansdowne House, Berkeley-square, W.</i>
1857	Sherrin, Joseph Samuel, Esq., LL.D. <i>Grammar School, Stowmarket.</i>
1859	*Sherwill, Major W. S., F.G.S. <i>Professor of Surveying, Civil Engineering College, Calcutta.</i>
1858	*Shipley, Conway M., Esq. <i>Army and Navy Club, S.W.; and Raheny, Dublin.</i>
1856	Shuttleworth, Sir J. P. Kay, Bart. <i>38, Gloucester-square, W.; and Gaethorpe-hall, Burnley, Lancashire.</i>
1859	*Silver, Stephen Wm., Esq. <i>66, Cornhill, E.C.; and Norwood Lodge, Lower Norwood, S.</i>
1853	Silver, William, Esq., M.A., Barrister-at-Law. <i>Addison-road, Kensington, W.</i>
1859	Silver, the Rev. Fred., M.A., F.R.A.S. <i>Norton Rectory, Market Drayton, Salop.</i>
1853	Simmons, Edward R., Esq., Barrister-at-Law. <i>13a, North Audley-street, W.</i>
1848	†Simmons, Colonel John L. A., R.E., C.B. <i>H. B. M.'s Consul, Warsaw; Junior United Service Club, S.W.</i>
1853	†Simpkinson, Lieut. Francis G., R.N. <i>55, Victoria-street, Westminster, S.W.</i>
1857	Simpson, Sir George (Governor-in-Chief, Rupert Land). <i>Leschina, Canada East.</i>
1857	Sitwell, Major W. H. <i>Junior United Service Club, S.W.</i>
1858	Skelmersdale, Edward, Lord. <i>Lathom-park, Ormskirk, Lancashire.</i>
1855	Smith, Rev. Brownrigg, M.A. <i>Shepherd-lane, Brixton, S.</i>
1859	Smith, Edward, Esq. <i>Dublin Castle.</i>
1836	*Smith, Edward Osborne, Esq., F.S.A., &c. <i>24a, Bryanston-square, W.</i>
1853	†Smith, George, Esq. <i>Peru.</i>
1857	Smith, George R., Esq. <i>73, Eaton-square, S.W.; and Telsden-park, Surrey.</i>
1860	Smith, Henry W. Seymour, Esq. <i>Sheen-mount, East Sheen, Surrey.</i>
1857	†Smith, Horace, Esq. <i>Saxcombe-park, Ware, Herts.</i>
1830	*Smith, James, Esq., F.R.F.L. & E. <i>Athenaeum Club, S.W.; and Jordan-hill, Glasgow.</i>

Year of Election.	
1854	Smith, John, Esq., Memb. Geograph. Soc. Bombay. 7, Mincing-lane, E.C.
1853	Smith, John Harrison, Esq. 17, Gracechurch-street, E.C.
1853	Smith, John Henry, Esq. 16, Pall Mall, S.W.; and Purley, Croydon, Surrey.
1838	*Smith, Octavius Henry, Esq. Thames-bank, Westminster, S.W.
1857	Smith, Captain Philip, Grenadier Guards. 39, Berkeley-square, W.
1839	Smith, Rev. R. Carter. Charlton Rectory, S.E.
1841	*Smith, Thomas, Esq.
	Smith, William, Esq., c.e. 18, Salisbury-street, Strand, W.C.
1859	1090*Smith, W. Castle, Esq. 8, Cumberland-terrace, Regent's-park, N.W.
1857	Smith, Wm. Gregory, Esq. Hudson Bay Company, Fenchurch-street, E.C.
1859	Smith, William Henry, Esq. 1, Hyde-park-street, W.
1837	*Smyth, Captain William, R.N. Conway House, Ryde, Isle of Wight.
1830	*Smyth, Vice-Admiral William Henry, K.S.V., D.C.L., F.R.S., V.P.R.A.S., F.R.A.S., Hon. M.R.I.A., Corr. Inst. Fr., &c. &c. Athenaeum Club, S.W.; and St. John's Lodge, near Aylesbury, Bucks.
1850	*Smythe, Colonel William J., R.A. Royal Artillery Institution, Woolwich.
1839	*Somers, Charles, Earl. Eastnor-castle, Herefordshire; and The Priory, Reigate, Sussex.
1858	*Some, Joseph, Esq. Stratford, Essex, E.
1855	Sopwith, Thomas, Esq., M.A., C.E., F.R.S. 43, Cleveland-sq., Hyde-park, W.; and Allenheads, Haydon-bridge, Newcastle-on-Tyne.
1845	*Sotheby, I.t.-Col. Frederick S., C.B., F.R.A.S. 3, Portugal-street, Mount-street, W.
1858	1100 Sotheby, Samuel Leigh, Esq. The Woodlands, Norwood, S.
1853	Southey, Henry Sedgfield, Esq., Barrister-at-Law. Athenaeum Club, S.W.
1857	*Speke, Capt. J. H. Jordans, Ilminster, Somerset.
1830	*Spottiswoode, A., Esq. New-street-square, Fetter-lane, E.C.
1855	*Spottiswoode, William, Esq., F.R.S. 12, James-street, Buckingham-gate, S.W.
1859	*Spratt, Capt. Thos. A. B., R.N., C.B. H. M. S. 'Medina,' Mediterranean.
1857	Spring-Rice, Hon. S. E. (Deputy-Chairman of the Board of Customs). Mount Trenchard, Fergus, Ireland.
1859	Stafford, Edward W., Esq. Colonial Secretary of New Zealand.
1853	Stanford, Edward, Esq. 6, Charing-cross, S.W.
1855	Stanhope, Philip Henry, Earl, Pres. Soc. of Antiquaries. 3, Grosvenor-place-houses, Grosvenor-place, S.W.; and Chevening, Seven Oaks, Kent.
1856	1110 Staniland, William, Esq., C.E. The Crescent, Selby, Yorkshire.
1856	Stanley, Edmund Hill, Esq. Craven Hotel, Strand, W.C.
1853	*Stanley, Edward Henry, Lord, M.P., D.C.L. 23, St. James's-square, S.W.
1856	Statham, John Lee, Esq. Cavendish Club, Regent-street, W.
1836	Staveley, Thomas, Esq. Horwood House, Southborough, Tunbridge Wells.
1858	Staveley, Thos. G., Esq. Foreign Office; and 24, Cambridge-st., Hyde-park, W.
1850	Steele, Colonel Thomas M., c.n., Coldstream Guards. 36, Chester-square, S.W.
1830	*Stephen, Sir George.
1857	Stephenson, Sir R. Macdonald, C.E. 6, Upper Hyde-park-gardens, W.
1854	Stevens, Frederic Perkins, Esq. Melbourne, Australia.
1855	1120 Stevens, Henry, Esq., F.S.A. Vermont-house, Camden-square, N.W.

Year of
Election

1841	Stevenson, Thomas, Esq., F.R.A. 37, Upper Grosvenor-street, W.
1860	Stewart, Major Patric, Bengal Engineers. Junior United Service Club, S.W.
1841	Stirling, Vice-Admiral Sir James. Senior United Service Club, S.W.
1860	*Stirling, William, Esq., M.P. 128, Park-st., Grosvenor-sq., W.
1860	Stocker, John Palmer, Esq. 93, Oxford-terrace, Hyde-park, W.
1858	Stoddart, George, Esq. H.B.M.'s Consul, Madeira.
1845	*Stokes, Capt. John Lort, R.N. United Service Club, S.W.; and Haverford-west, Wales.
1858	Stepford, Capt. James J., R.N. 4, Norfolk-crescent, Hyde-park, W.
1858	Stepford, James Sydney, Esq. 18, Savile-row, W.
1858	Strangford, Percy Ellen, Viscount. 19, Mansfield-street, W.
1858	Stratford de Redcliffe, Stratford Canning, Viscount. 29, Grosvenor-square, W.
1853	Strutt, George H., Esq., F.R.A.S. Bridgehill, Belper.
1858	Strutt, Captain Hammel Ingold. Examiner Royal Mail Steam Company, Southampton.
1859	*Strutt, Captain William. Palace, Kent.
1853	*Strzelecki, Count P. E. de, C.B., F.R.S. 20b, Savile-row, W.
1859	Stuart, Lieut.-Col. J. F. Dudley Crichton, M.P., Grenadier Guards. 6, White-hall-place, S.W.
1834	*Sturge, Thomas, Esq. Northfleet, Kent.
1833	Sturt, Capt. Charles, F.L.S. St. Edmond's, Tivoli, Cheltenham.
1853	Statfield, William, Esq. 15, Leinster-terrace, Westbourne-terrace, W.
1857	1140 Sullivan, Captain Bartholomew J., R.N., C.B. Board of Trade, S.W.
1856	Sutherland, Kenneth L., Esq., Paymaster R.N., Barrister. Junr. U.S. Club, S.W.; 3, Mulgrave-place, the Hoe, Plymouth; and H.M.S. 'Royal Albert,' Devonport.
1853	†Sutherland, Peter C., Esq., M.D. Natal.
1840	*Sutherland, Robert, Esq. Glencoe-house, by Appin, N.B.
1857	Swanzy, Andrew, Esq. 38, Cannon-street, E.C.
1857	*Sweeting, Robert, Esq. 7, Clement's-lane, Lombard-street, E.C.; and London-hill, Harrow.
1836	*Swinburne, Rear-Admiral Charles H. 18, Grosvenor-place, W.; and Capheaton, near Newcastle-upon-Tyne.
1851	Sykes, Colonel William Henry, M.P., F.R.S., Hon. M.R.I.A. Athenaeum Club, S.W.; and 47, Albion-street, Hyde-park, W.
1859	Sykes, Christopher, Esq. Sledmere, Malton.
1852	*Syngs, Major Millington H., R.E. Curragh Camp, Ireland.
1852	1150 Tagart, Courtenay, Esq. Reform Club, S.W.; and Paris.
1859	Tagart, Francis, Esq. 31, Craven-hill-gardens, Hyde-park, W.
1857	*Tait, Robert, Esq. 5, Queen Anne-street, W.
1856	Taylor, George Cavendish, Esq. Army and Navy Club, S.W.
1854	*Taylor, John Stopford, Esq., M.D. 1, Springfield, St. Anne-street, Liverpool.
1857	Teesdale, John M., Esq. 9, Norfolk-square, Hyde-park, W.
1857	Tennant, Professor James. 149, Strand, W.C.
1859	Tennant, Major J. F., Bengal Engrs. Care of the Dpty. Survr.-General, Calcutta.

Year of Election.	
1830	*Thatcher, Colonel, E.I.C. Thomas, Henry Harrington, Esq. Lansdowne-crescent, Bath.
1854	Thompson, Thomas A., Esq. London and County Bank, Cambridge.
1859	1160 Thompson, William C., Esq. 81, Cambridge-terrace, Hyde-park, W.; and Royal Cork Yacht Club, Queenstown.
1854	*Thomson, J. Turnbull, Esq. Chief Surveyor, Otago, New Zealand.
1848	*Thomson, Thomas, Esq., M.D. Calcutta.
1854	Thornton, Rev. Thomas Cooke, M.A., M.R.I. Brock-hall, Northamptonshire.
1847	Thorold, Rev. A. W. 16, Bedford-square, W.C.
1858	Thorold, Henry, Esq. 35, Gloucester-square, W.
1854	Thuillier, Major H. L., Superintendent of Revenue Survey of India. Calcutta.
1859	Tilheard, James, Esq. Education Department, Council Office, Downing-street, S.W.; and 10, Woodland Cottages, Turnham Green, W.
1853	*Tindal, Charles John, Esq. New South Wales.
1846	1170 Tindal, Capt. L. Symonds, R.N. 1, Pembridge-square, Bayswater, W.
1859	*Tinne, John A., Esq. Briarley, Aigburth, near Liverpool.
1859	Tomline, George, Esq., M.P. 1, Carlton-house-terrace, S.W.
1853	*Tomline, George Taddy, Esq., F.S.A. 21, Old-buildings, Lincoln's-inn, W.C.; and Ash, near Sandwich, Kent.
1835	*Tooke, Arthur Wm., Esq., M.A. Pinner-hill-house, near Watford, Middlesex.
1856	Torrance, John, Esq. 5, Chester-place, Hyde-park-square, W.
1859	Townsend, John, Esq., Lieut. R.N. 11, Burlington-street, Bath.
1846	*Towry, George Edward, Esq. Oakfield-lodge, East Cowes, Isle of Wight.
1858	Towson, J. Thomas, Esq. Secretary Local Marine Board, Liverpool.
1858	Tracy, the Hon. Sudeley Charles G. H. Guards Club, S.W.
1860	1180 Travers, John Ingram, Esq. 19, Swithin's-lane, E.C.
1859	Tremlett, Rev. Francis W., M.A. Belsize Park, Hampstead, N.W.
1830	Trevelyan, Sir Walter Calverly, Bart., M.A., F.S.A., F.L.S., F.R.S.N.A., &c. Athenaeum Club, S.W.; Wallington, vid Newcastle; and Nettlecombe, Somerset.
1860	Trigg, John Davis, Esq. Magdalen Hall, Oxford.
1859	Tronson, Dr. J. N., Assist.-Surgeon, R.N. H.M.S. 'Hogue,' Greenock.
1858	Trotter, Alexander, Esq. Devonshire-place-house, New-road, N.W.
1839	*Truman, Dr. Matthew. 40, Norland-square, Notting-hill, W.
1835	*Tuckett, Frederick, Esq. 4, Mortimer-street, Cavendish-square, W.
1852	Tudor, Edward Owen, Esq., F.S.A. 46, Westbourne-terrace, W.
1857	Tudor, Henry, Esq. 46, Westbourne-terrace, W.
1834	1190 *Turnbull, Rev. Thomas Smith, F.R.S. University Club, S.W.; and Blofield, Norfolk.
1849	Twiss, Travers, Esq., D.C.L., F.R.S. 19, Park-lane, W.
1858	Twyford, A. W., Esq. Bengal Cavalry; Reform Club, S.W.; and Clayton Wickham, Hurstpierpoint, Sussex.
1859	Tytler, Capt. W. Fraser. Aldourie, Inverness.
1854	*Uzielli, Matthew, Esq. Hanover-lodge, Regent's-park, N.W.
1858	*Uzielli, Theodosius, Esq. 114, Piccadilly, W.

Year of Election.	
1844	*Vacher, George, Esq. 29, Parliament-street, S.W.
1845	*Vane, Lord Harry G., M.P. 1, Grosvenor-place-houses, S.W.
1858	Vardon, Arthur, Esq. 10, Craven-hill-gardens, Hyde-park, W.
1856	Vardon, Major Frank, 25th Madras Infantry. 10, Craven-hill-gardens, Hyde-park, W.; and Madras.
1857	1200 Vardon, Thomas, Esq. Library, House of Commons, Palace, Westminster, S.W.
1856	*Vaughan, James, Esq., F.R.C.S., Bombay Army. Bombay.
1849	Vaux, William S. W., Esq., M.A., F.S.A. British Museum, W.C.
1852	*Vavasour, Sir Henry M., Bart. Travellers' Club, S.W.; and Spalding-ton-hall, Yorkshire.
1855	Vavasseur, James, Esq. 2, De Crespigny-park, Denmark-hill, S.
1860	Verbeke, Frederick, Esq. 41, Victoria-street, Westminster, S.W.
1837	*Verney, Major Sir Harry C., Bart., M.P., F.R.A.S. Travellers' Club, S.W.; 32, South-street, Grosvenor-square, W.; and Claydon-house, Bucks.
1857	Verrey, Charles, Esq. Switzerland.
1852	Verulam, James Walter, Earl of. Gorhambury, near St. Albans; Barry-hill, Surrey; and Messing-hall, Essex.
1859	Vesey, Arthur, Esq. Long Ditton, Kingston, Surrey, S.W.
1830	1210 Vetch, Captain James, R.E., F.R.S. Admiralty, S.W.
1830	*Vidal, Vice-Admiral Alex. T. E. 10, John-street, Adelphi-hill, W.C.
1840	Vigne, G. T., Esq. The Oaks, Woodford, N.E.
1857	Vincent, John, Esq., Barrister-at-law. 4, Lamb-buildings, Temple, E.C.
1858	Vines, William Reynolds, Esq., F.R.A.S. The Elms, Ealing, W.
1838	*Vyvyan, Sir R. Rawlinson, Bart., F.R.S. Trelocarren, Cornwall.
1857	Vyvyan, Richard H. S., Esq., F.R.A.S. Conservative Club, S.W.; and Trewan St. Columb, Cornwall.
1846	Wade, Sir Claude Marten. 16, Queen-square, Bath.
1852	Wade, Captain Mitchell B. 66, St. John-street, Liverpool.
1853	*Wagstaff, William Racster, Esq., M.D., M.A. Thornton-house, Clapham-road, S.
1856	1220 Waldegrave, the Hon. Geo. Assis. Librarian House of Commons, S.W., 4, Harley-st., W.
1846	Walker, James, Esq., C.E., F.R.S. 23, Great George-street, Westminster, S.W.
1859	*Walker, Major James, Bombay Engineers. Murree, near Raval Pindé, Punjab.
1830	Walker, John, Esq., Hydrog. Hon. E.I.C. 9, Castle-street, Holborn, W.C.
1858	*Walker, Captain John, H.M.'s 66th Foot. 13, Westbourne-street, Hyde-park-gardens, W.
1856	Walker, Joshua, Esq. 40, Upper Harley-street, W.
1853	Walker, Captain William Harrison, R.C.S. 103, Gloucester-terrace, W.; and Board of Trade, S.W.
1854	†Wallace, Alfred Russell, Esq. Indian Archipelago.
1858	Walron, Theodore, Esq., M.A. 10, Hereford-street, W.
1853	Walter, Henry Fraser, Esq. Papplewick-hall, near Nottingham.
1853	1230 *Ward, George, Esq.
1860	Ward, Captain J. Hamilton, R.N. Sydney Lodge, Torquay.

Year of Election.	
1859	Warre, Arthur B., Esq. 54, <i>Louendes-square</i> , S.W.
1851	Warre, John Ashley, Esq., M.P., F.R.S. 54, <i>Louendes-square</i> , S.W.; and West Cliff, <i>Ramsgate</i> .
1859	Washington, Capt. John, R.N., F.R.S. <i>Hydrographer to the Navy, Admiralty</i> .
1852	Watkins, John, Esq., F.R.C.S., F.S.A. 2, <i>Falcon-square</i> , <i>Aldersgate-street</i> , E.C.
1859	Watson, James, Esq. 24, <i>Endsleigh-street</i> , W.C.
1858	Watson, Josh. John Wm., Esq., C.E., PH. DR. <i>Ballygroom, Rathfarnham, Ireland</i> .
1853	Watts, J. King, Esq. <i>St. Ives, Huntingdonshire</i> .
1857	*Waugh, Lt.-Colonel Andrew Scott, Bengal Engineers, Surveyor-General and Superintendent Great Trigonometrical Survey. <i>India</i> .
1858	Webb, Capt. Sydney. 24, <i>Manchester-square</i> , W.
1836	*Webber-Smith, Colonel James, 95th Regiment. <i>West Ashling, Sussex</i> .
1858	Webster, George, Esq., M.D. <i>Dulwich, S.</i>
1838	Wedderburn, Sir John, Bart., F.R.A.S. <i>Keith-house, Blackshiels, N.B.</i>
1851	Weller, Edward, Esq. 34, <i>Red Lion-square</i> , W.C.
1853	*Wellington, Arthur Richard, Duke of, Major-General, D.C.L. <i>Apsley-house, W.</i> ; and <i>Strathfieldsaye, Hampshire</i> .
1857	West, Lieut.-Colonel J. Temple. <i>Bewick Lodge, Ryde, Isle of Wight</i> .
1859	Westgarth, William, Esq. 20, <i>Threadneedle-street</i> , E.C.
1853	Westmacott, Arthur, Esq. <i>United Mexican Mining Association</i> , 5, <i>Finsbury-circus</i> , E.C.
1852	†Westmacott, Lieut.-Colonel, R.M. <i>Junior United Service Club</i> , S.W.
1844	1250*Westminster, Richard, Marquis of. 33, <i>Upper Grosvenor-street</i> , W.; <i>Eaton-hall, Cheshire</i> ; and <i>Motcombe-house, Dorsetshire</i> .
1857	Westminster, Richard C. Trench, Dean of. <i>Deanery, Westminster</i> , S.W.
1852	Weston, Alex. Anderdon, Esq., M.A. 18, <i>Rutland-gate, Hyde-park</i> , S.W.
1830	*Weyland, John, Esq., F.R.S. <i>Woodrising-hall, Norfolk</i> .
1858	Wheatley, G. W., Esq. 150, <i>Leadenhall-street</i> , E.C.
1859	Wheelwright, William, Esq. <i>Brunswick-house Hotel, Hanover-square</i> , W.C.
1837	*Whewell, Rev. William, D.D., F.R.S., F.S.A. Vice-Chancellor, Cambridge. <i>Athenaeum Club</i> , S.W.; and <i>Lodge, Cambridge</i> .
1853	*Whinfield, Edward Wrey, Esq., R.A. <i>Boeington-lodge, Hemel-Hempstead, Herts</i> .
1837	Whinyates, Lieut.-General E. C., R.A., C.B., K.H. <i>Dorset Villa, Cheltenham</i> .
1839	*Whishaw, James, Esq., F.S.A. 16, <i>York-terrace, Regent's-park</i> , N.W.
1857	1260White, Arthur D., Esq., M.D. <i>Tower House, Winchester</i> .
1855	*White, Charles, Esq. 10, <i>Lime-st., E.C.</i> ; and <i>Barnesfield, near Dartford, Kent</i> .
1857	White, Henry, Esq. <i>Harold-house, Bayswater</i> , W.
1856	White, Robert, Esq. <i>Coues, Isle of Wight</i> .
1852	White, William Foster, Esq. <i>Treasurer, Bartholomew Hospital</i> , E.C.
1849	Whitmore, George, Esq. 28, <i>Oxford-square</i> , W.
1854	Wilkinson, Frederick E., Esq. <i>Sydenham, Kent</i> , S.E.
1839	*Wilkinson, Sir John Gardner, D.C.L., F.R.S. <i>Athenaeum Club</i> , S.W.; and 33, <i>York-street, Portman-square</i> , W.
1860	Wilkinson, Captain A. Eastfield, R.A., 7th Hussars. <i>Army and Navy Club</i> .

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List of Fellows of the Royal Geographical Society.

Year of Election.	
1857	Willcock, J. W., Esq., Q.C. <i>Stone-buildings, Lincoln's-inn; and Rosensteal, Avenue-road, St. John's-wood, N.W.</i>
1857	Williams, Edwin, Esq. 137, <i>Fenchurch-street, E.C.</i>
1856	Williams, Henry Jones, Esq. <i>Club Chambers, S.W.; and 82, King William-st., E.C.</i>
1856	Williams, Henry R., Esq. <i>Board of Trade, S.W.</i>
1858	Williams, Robert F., Esq. 76, <i>Coleshill-street, Eaton-square, S.W.</i>
1857	Williams, Major-General Sir Wm. F., Bart., K.C.B., D.C.L. <i>Army and Navy Club, S.W. Commander-in-Chief, Canada.</i>
1850	*Willich, Charles M., Esq. 25, <i>Suffolk-street, Pall-mall-east, S.W.</i>
1857	Willis, Captain William A., R.N. <i>Royal Hospital, Greenwich, S.E.</i>
1859	Willoughby, Sir H. Pollard, Bart., M.P. 63a, <i>Brook-street, W.; Baldon-house, Oxfordshire; and Berwick Lodge, Gloucestershire.</i>
1859	Willoughby, Henry W., Esq. 4, <i>Bedford-square, W.C.</i>
1854	*Wilson, Captain Thomas, R.N. <i>Army and Navy Club, S.W.</i>
1854	1280Wodifield, Robert Denby, Esq. <i>Conservative Club, S.W.; and 24, Connaught- square, W.</i>
1846	Wolff, Rev. Joseph, D.D. <i>Isle Brewers, Somerset.</i>
1859	Wombwell, C. Orby, Esq.
1853	Wood, Right Hon. Sir Charles, Bart., G.C.B., M.P. 10, <i>Belgrave-square, S.W.;</i> <i>and Hickleton, Yorkshire.</i>
1855	Wood, Captain James, R.N. <i>Loch Alsh-house, Dingwall, N.B.</i>
1857	Woodhead, Captain H. J. Plumridge. 1, <i>James-street, Adelphi, W.C.</i>
1845	Worthington, Rev. James, D.D. 27, <i>John-street, Bedford-row, W.C.</i>
1856	Worthington, J. Hall, Esq. <i>Liverpool.</i>
1857	Wortley, Rt. Hon. James Stuart, Q.C. 29, <i>Berkeley-square, W.; and Sheen, Surrey, S.W.</i>
1860	Wright, Rev. Henry P., Chaplain to the Forces. <i>Canterbury.</i>
1839	1290*Wyld, James, Esq., M.P. <i>Charing-cross, W.C.</i>
1858	Wynne, Rt. Hon. John, M.P. <i>National Club, S.W.; and Haslewood, Sligo.</i>
1833	Yates, John Ashton, Esq. 33, <i>Bryanston-square, W.</i>
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PRESENTATION

OF THE

ROYAL AWARDS

To CAPTAIN R. F. BURTON AND CAPTAIN JOHN PALLISER.

THE President read the following statements explanatory of the grounds on which the Council had awarded the Royal Medals respectively :—

The Founder's Medal of the Royal Geographical Society has been adjudicated to Captain R. F. Burton, of the Bombay Army, who has explored a vast region of Eastern and Central Africa never before traversed by any geographer; and for the discovery of the great internal lake of Tanganyika—the more northern lake of Nyanza being discovered by his coadjutor, Captain Speke.

Captain Burton is well known for his most interesting journey, under the auspices of this Society, as an Afghan pilgrim, to the Holy places in Arabia in the autumn of 1853, as recorded in our Journal, vols. xxiv. and xxv., and in the popular account of it, published by himself. These volumes showed Captain Burton to be an accomplished Orientalist, and admirably fitted for a traveller among the difficulties of Eastern countries.

In the ensuing year he volunteered to explore Eastern Africa from Berbera to Zanzibar, accompanied by Lieutenant Stroyan and Lieutenant Speke, the latter of whom had been for several years collecting the fauna of Little Tibet and the Himalaya Mountains. In a preliminary journey, Captain Burton, alone, succeeded in reaching and describing Harar, never before visited by Europeans. Lieutenant Speke, on his part, also alone, explored the interior of the Somali country, made extensive collections and many observations, and produced a map of those tracts. The farther prosecution of that expedition, when these officers were united with Stroyan and Herne, was frustrated by an attack of the Somalis, in which Lieutenant Stroyan was killed, and Lieutenants Burton and Speke were both severely wounded. These occurrences are recorded in

our Journal, vol. xxv., and also in the work 'First Footsteps in Eastern Africa.'

In 1856 Captain Burton proceeded with Captain Speke, under the auspices of our Society, and assisted by the Foreign Office and the Hon. East India Company, to Zanzibar; and in January, 1857, made a tentative journey to Fuga, the account of which, by Captain Burton, with a map constructed from Captain Speke's field-book, is given in our Proceedings, and will appear in a more extended form in the next volume of the Journal.

On June 26th, 1857, Captains Burton and Speke started from Zanzibar for the interior, and succeeded in reaching the great Lake Tanganyika, 300 miles long and 30 broad, and about 700 miles from the coast; having travelled, at a rough estimate, from 1200 to 1500 miles. Their very careful and complete itineraries, maps and field-books, have been received; Captain Speke having made astronomical observations which determine the latitude and longitude of the places they visited. These results, as well as the determination of the principal altitudes, were obtained in spite of severe hardships, privations, and illnesses.

A marked feature of the expedition is the journey of Captain Speke from Unyanyembé to the vast inland fresh-water lake called Nyanza, the south end of which was fixed by him at $2^{\circ} 30' S.$ lat. and $33^{\circ} 30' E.$ long., which, being estimated to have a width of about 90 miles, is said to extend northwards for upwards of 300 miles.

For the very important results of the expedition—of which Captain Burton was the leader—as well as for his former bold and adventurous researches, the Council have considered him to be highly entitled to the honour conferred on him.

The President then addressed Captain Burton in these words:—

"Captain Burton,—I have now to request you to accept this Medal, with the assurance that, as the geographers of England have watched your various and most adventurous explorations with the deepest interest, so I rejoice that the Council of this Society has had it in their power thus to recompense your highly distinguished services.

"I must also take this opportunity of expressing to you my hearty approbation of the very important part which your colleague, Captain Speke, has played in the course of the African expedition headed by yourself. In the Address to the Society, which is to follow, when I further advert to your meritorious services, I shall dwell upon the discovery of the vast interior Lake of Nyanza, made by your associate when you were prostrated by

illness,—a discovery which in itself is also, in my opinion, well worthy of the highest honour this Society can bestow."

Captain Burton replied :—

" Mr. President,—I thank you, Sir, most sincerely for this honour, and for the kind and flattering expressions by which you have enhanced its value. Allow me, at the same time, to embrace the opportunity of expressing my gratitude to this powerful and influential Society for the favours of past years. When comparatively unknown I was enabled, by the generous support of the Royal Geographical Society, to enter upon the field of Arabian exploration. At a subsequent period their interest forwarded me into the Somali country; and, on the present occasion, to them—and to them only—do I ascribe the success which has attended my last expedition. This valuable gift will remain with me a lasting memorial of my debt of gratitude.

" You have alluded, Sir, to the success of the last expedition. Justice compels me to state the circumstances under which it attained that success. To Captain J. H. Speke are due those geographical results to which you have alluded in such flattering terms. Whilst I undertook the history and ethnography, the languages and the peculiarities of the people, to Captain Speke fell the arduous task of delineating an exact topography, and of laying down our positions by astronomical observations—a labour to which at times even the undaunted Livingstone found himself unequal. I conclude with the warmest wishes for the prosperity of the Royal Geographical Society, and with expressing my desire that we may have a further opportunity of prosecuting our labours in this good cause."

The Patron's or Victoria Gold Medal has been awarded to Captain John Palliser, for the successful results of the exploration of large tracts in British North America by the expedition under his command during the years 1857–8; and more particularly for the determination of the existence of practicable passes across the Rocky Mountains within the British territories.

This expedition—as is well known—originated in the pressing recommendation of the Royal Geographical Society; and the officers appointed by Her Majesty's Government to serve under Captain Palliser were, Dr. Hector, naturalist and geologist; Lieutenant Blakiston, magician; Mr. Sullivan, secretary; and M. Bourgeau, botanist.

One of the chief geographical features of the first year's survey was the discovery of a low waterparting, hitherto unknown to us, near the "Qui Appelle Lakes," where the water flows eastwards into the Assiniboine River, and westwards into the Saskatchewan.

A long and rapid winter journey, with sledges and dogs, from Fort Carlton, by Forts Pitt and Edmonton, to Mountain House, on the eastern flank of the Rocky Mountains, was accomplished by Dr. Hector to procure men and horses, and during which he obtained valuable preliminary information. Numerous astronomical and physical observations were made by Dr. Hector and Mr. Sullivan at Fort Carlton; the former of these sending home a clear sketch of the geological structure of the vast region of the Prairie country, with its horizontal strata of cretaceous and tertiary formations, as contrasted with the rocky eastern country traversed by the canoe route between Lakes Superior and Winnipeg. In the same period, Lieutenant (now Captain) Blakiston made, as we are informed by General Sabine, many important observations in Terrestrial Magnetism.

In the last summer—leaving Fort Carlton, and approaching the Rocky Mountains midway between the north and south branches of the Saskatchewan—Captain Palliser divided his force into three parties. Accompanied by Mr. Sullivan, he traversed the Rocky Mountains himself by the Kananaski Pass to the south of Old Bow Fort, the summit level of the route being fixed at 5985 feet above the sea. Reaching the drainage of the Pacific, he descended the Kutanie River till he met with north-flowing lakes, which are the real sources of the great Columbia; and thence, following the Kutanie River southward along the Tobacco Plains to near the American boundary, he recrossed the chain by the Kutanie Pass, nearly 6000 feet above the sea, in lat. $49^{\circ} 30'$. Captain Blakiston, also (as since reported), traversed and levelled this pass, which is in British territory, and returned to the plains of the Saskatchewan by the Boundary Pass, the greater part of which is in American territory.

Whilst M. Bourgeau remained to collect plants in a favourable spot amid the Rocky Mountains, in lat. 51° , Dr. Hector traversed the chain by the Vermilion Pass, in $51^{\circ} 10'$, emerging into the Pacific drainage on the banks of the Kutanie River. The height of this pass was determined to be 4944 feet, and it is therefore much lower than the other passes, which were examined. Threading his way to the north around two lofty mountains, which he named Mount Goodsir and Mount Vaux, he travelled over high land to the N.N.W. until he passed round the flanks of the highest mountain in this part of the range, 15,789 feet high, in lat. 52° , which he named Mount Murchison; and then following the north

Saskatchewan from its glacial sources, he descended to Mountain House on the east, and regained Fort Edmonton, charged with numerous geological as well as astronomical and physical observations.

For the vigorous execution of his duties, the judicious distribution of the parties under his command, and particularly for having successfully carried out the wishes of the Royal Geographical Society and the instructions of Her Majesty's Government, in determining the existence of several practicable passes across the Rocky Mountains of British North America (hitherto not laid down on any published map), between the American boundary, or 49° , and 52° N. lat., the Council have awarded the Patron's Medal to Captain John Palliser.

The President then addressed the Earl of Carnarvon in these words :—

"Lord Carnarvon,—It gives me great satisfaction to place in your hands, as the representative of the Secretary for the Colonies, this the Patron's or Victoria Medal of the Royal Geographical Society.

"Knowing as I do that the deepest interest in the Palliser Expedition has been felt by the Secretaries for the Colonies of the last and present Administration, I also know that neither Mr. Labouchere, under whose auspices these researches were organised, nor Sir Edward B. Lytton, who has vigorously supported them, can attach more importance to their issue than your Lordship does in coming here to receive this Medal.

"Pray, therefore, preserve it until Captain Palliser, after traversing the Rocky Mountains and British Columbia, shall arrive in England; and then beg him to consider it as the best reward the geographers can offer to him, in honour of the important services performed by the expedition under his command."

The Earl of Carnarvon replied :—

"Sir,—In accepting, on behalf of Captain Palliser, the Medal which, by the award of the Geographical Society and yourself, has been assigned to him for the conduct of the expedition in British North America, I greatly regret the absence of Sir Edward Lytton, who has from the first taken a deep interest in the success of the expedition, and to whom the task which I have now undertaken more properly belongs. At the same time I may, from the information to which I have had access at the Colonial Office, safely endorse the praise which you have given to Captain Palliser for the skill and perseverance, the practical energy and discrimination which he has evinced—essential qualities in any officer situated as he has been.

"The expedition which he has conducted has already achieved

considerable results. Whilst the tide of emigration in the United States rolls westward some 200 or 300 miles every year, we have not been altogether idle north of the 49th parallel. It may now almost be said that three links have been forged in the great chain of regular communication from the Atlantic to the Pacific, stretching across some 3000 miles of continent.

"Within the last two years an expedition has been sent out by the Canadian Government to explore the country which lies between Lake Superior and the Red River settlement. The reports of the expedition are in print, are accessible to every one, and deserve an attentive consideration.

"From the Red River settlement to the base of the Rocky Mountains Captain Palliser has conducted his inquiries; and in the wonderful rise of the new colony of British Columbia, may be traced the completion, in outline at least, of the long line of communication.

"It is not now unreasonable to look forward to the establishment of a regular system of transit, commencing from Nova Scotia and the shores of New Brunswick, passing through Canada, touching upon the Red River settlement, crossing the prairies of the Saskatchewan, passing through the Vermilion Pass, where we know that the inclination is so moderate that nature has placed no insurmountable obstacles to the construction of a railway, till it reaches the gold-bearing colony of British Columbia, creating fresh centres of civilisation, and consolidating British interests and feelings.

"It only remains for me to undertake that the Medal which you have placed in my hands shall be duly conveyed to Captain Palliser; and I feel sure that this tribute of praise on the part of the Geographical Society will be held by him as the most valuable memorial of his long, arduous, and successful expedition."

A Gold Watch having been adjudicated by the Council to Mr. John Macdougall Stuart "for his remarkable exploration in South Australia, undertaken at his own expense, and which led to the signal discovery of 18,000 square miles of valuable and well-watered pastoral country, far to the north of the western saline region of that colony"—

The President, in delivering the watch to Count Strzelecki, thus spoke :—

"To you, Count Strzelecki, who, at your own expense, and animated solely by the love of discovery, explored many years ago the water-parting of Eastern Australia, I confide this watch. In requesting you to have it conveyed to Mr. Macdougall Stuart (who was well trained in Australian adventure by our medallist Sturt), I beg you to assure him, that I have read the modest account of his great success with true gratification, and have rejoiced in the

hearty commendation bestowed upon his conduct by the Governor of South Australia, Sir R. G. Macdonnell. The bold explorer will, I have no doubt, consider this memento of our esteem to be much enhanced by receiving it through the hands of so distinguished an Australian traveller as yourself."

Count Strzelecki replied:—

"Sir Roderick,—I am deeply indebted to you, not only for the flattering choice which you have made of me as the medium of transmitting this award of the Council to Mr. Macdougall Stuart, but also for the kind and courteous manner in which you have commented upon the services rendered to geography by my fellow Australian explorer.

"I need not assure you, Sir, that this mark of the approbation of the Royal Geographical Society, whilst it stamps the value of the journeys and important discoveries of Mr. Stuart, will be to him both a proud memorial of those services, and a fresh stimulus to his further exertions in the cause of geography."

united to those who to avoid self-punishment would have
left all teaching until invited at his arrival, natural & hu-
man, phys. and no doubt also to the world's best known works
and of highest value, you might suppose to have been prepared
all of himself, & the more creditable it would be to himself
and his friends to have done so.

ADDRESS

TO THE

ROYAL GEOGRAPHICAL SOCIETY OF LONDON;

Delivered at the Anniversary Meeting on the 23rd May, 1859,

BY SIR RODERICK IMPEY MURCHISON,

G.C.S.R.S., D.C.L., M.A., F.R.S., &c.,

PRESIDENT.

In mourning for the loss of the most illustrious geographer and traveller of our age, I naturally open the Address to this Society by laying before you a brief sketch of the career of Baron Alexander von Humboldt, and by an effort, inadequate as it must be, to pay a due tribute to the memory of him who, in the course of a long, well-spent, and glorious life, has justly obtained the admiration of mankind.

William and Alexander von Humboldt, the sons of a Major in the Prussian service, were two as remarkable men as the last century has produced; the one a profound scholar and celebrated statesman, the other our deceased associate.

Alexander, or, rather, Frederick Henry Alexander von HUMBOLDT was born in the year 1769, so famous for the births of Napoleon, Walter Scott, and Wellington. He owed his early sound education to his mother, a relative of Princess Blücher. Being of a weakly constitution when young, it appears, to use his own words, that, with an improvement in his health, his mind was suddenly illuminated, and that he was roused to endeavour to keep pace with his brother William, who was two years older than himself. The youths were first instructed at Berlin, in philosophy, law, and statesmanship, by Engel, Klein, and Wohrn; and

the eminent Willdenow, observing the love of the study of nature in Alexander, initiated him in botany. Thus prepared, the two brothers entered the University of Frankfort on the Oder, and subsequently that of Göttingen, where they were taught by Heyne and Eichhorn, and where Alexander specially profited by the lectures of that great zoologist, the striking and original Blumenbach. He next repaired to the Mining School of Freiberg, in 1791, to complete that education which should qualify him for examining the earth, its constituent parts and superficial products. There he met with Leopold von Buch, also a disciple of Werner, the great geologist of the day, who, by his eloquent lectures, had given an European character to that small but justly celebrated mining school.

The friendship then formed between Humboldt and Von Buch was kept up through life; and it is highly to the credit of Werner and his little mining school of Saxony, that he should have launched two such men,—the one to become the greatest geologist which Germany has produced, the other the most universal geographer, traveller, and natural philosopher of this century. In their observations of nature, they both, however, soon emancipated themselves from some of the untenable dogmas of their master. Honoured as I have been in my humble career by the encouragement of both these great men, I may be permitted to state that, as Von Buch was the senior scholar at the Mining Academy of Freiberg, so he seemed to preserve through life a commanding influence over his illustrious friend on all those subjects connected with the structure of the earth in which I have been most occupied. No two men could be more dissimilar in character. Possessing a warm temperament and a somewhat abrupt address, Leopold von Buch contrasted strongly with the bland and captivating Humboldt; yet each of these Freiberg scholars secured the sincere affection as well as admiration of their contemporaries in their respective careers through life.

Whilst he held official appointments in the department of mines of Prussia, and at Bayreuth and Anspach, Humboldt prepared his works, the ‘*Flora Subterranea Freibergensis et Aphorismi ex Physiologia Chemica Plantarum*,’ and the ‘*Floræ Freibergensis Prodromus*.’ Even as early as 1797 he showed the great versatility of his powers by another work, on a very different subject, ‘*The Nervous and Muscular Irritation of Animal Fibre*,’ due to his intercourse with Galvani.

After the death of his accomplished mother, Humboldt began to arrange the scheme of his future travels. His strong desire to undertake these travels was, as he himself assures us, raised into a passion by Forster, one of the companions of Cook in his voyage round the world, and whose acquaintance the young Prussian scholar had made at Göttingen, and with whom he made geological excursions both in England and on the Rhine. And here I may state that it is the opinion of the eminent geographer, Carl Ritter, as expressed to me in a letter just received, that the whole of the future life of Humboldt was powerfully influenced by the voyager Forster, whose well-told tales of adventure first excited in his breast that ardour for travel and research in the domains of nature which characterised him ever after.

Studying meteorology in Paris, and collecting materials for the purpose of explorations, he formed the acquaintance of his future companion Aimé Bonpland, with whom he was to have proceeded in the expedition of Baudin, destined to survey South America. But, impatient of the delays attendant on that French expedition, he went to Madrid with his young botanical friend, to obtain the royal Spanish authority for their exploration of South America. After a short excursion to Egypt, they sailed in the Spanish frigate *Pizarro*, which fortunately reached Cumana in July, 1791; having visited Teneriffe and examined its wonders by the way, and having almost miraculously escaped the British cruisers.

I will not occupy your time by alluding to all the tracts in South and Central America successively visited and explored by Humboldt. Suffice it to say that, during four years of indefatigable surveys and researches, including his daring voyages up the great rivers Orinoco, Negro, and Amazon, he enriched science by his numerous astronomical determinations, and observations on the meteorological, botanical, zoological, mineralogical, geological, and ethnological phenomena. The exploration of the course of the Amazon was followed by his ascent of Chimborazo, where, at the height of 19,300 feet, he and Bonpland made observations, notwithstanding their great sufferings, caused by the rarefaction of the atmosphere and the intensity of the cold. From Quito and Peru he repaired to Mexico, making by the way observations on the narrowest portion of the isthmus which connects Central with South America, which led him to entertain those ideas on the practicability of an Inter-Oceanic Ship Canal in that paral-

lel, to which the attention of this Society has been called on a former occasion.

Returning to France from the United States in 1804, Paris was his chief home from that year to 1827. Arranging there his splendid collections, and surrounded and honoured by all the leading members of the Academy of Sciences, he published successively that series of volumes which, showing his mastery over all the kingdoms of nature, have rendered his name famous for all ages. Although in these efforts he was assisted by Arago, Gay Lussac, Cuvier, Klaproth, Valenciennes, and Latreille, his grand generalizations have drawn from his contemporaries the admission, that since Aristotle, Humboldt is almost the only example of such achievements.

In 1829, on the invitation of the Emperor Nicholas, who defrayed the expenses of the journey, Humboldt, being then in his sixtieth year, undertook his memorable expedition into Siberia, accompanied by the eminent mineralogist Gustav Rosé and the profound microscopist Ehrenberg. This journey, hurried as it was—for he travelled 11,500 miles—was not only fertile in those results which are recorded in his '*Asie Centrale*', and in the excellent mineralogical work of his companion Rosé, but was also productive of many important data relating to terrestrial magnetism.

We know, indeed, that his Siberian travels gave rise to that influence, which was constantly exerted by him in succeeding years in urging the various European Governments to establish magnetic observations in distant lands, and particularly over wide regions in Russia, America, and England. When the British Association inaugurated the formation of the Physical Observatory at Kew, which has put forth such good fruits, we well know the strength we obtained when we appealed to him; for then it was that he vigorously maintained the necessity of rendering physical observatories independent of astronomical observatories. We also know how such physical observatories, both here and abroad, have enabled our eminent associate Sabine to investigate the laws of magnetical phenomena.

It is unnecessary that I should here mention all the publications of Humboldt which have been prized by our generation. It is enough to say that the same marvellous man, who made such gigantic journeys in distant lands, and published splendid works in illustration of them, has also produced, both in the French and German languages, a variety of works on astronomy, on geology (*'Classification des Roches'*), on the geographical distribution of

plants, on the distribution of heat in the globe, on electrical fishes, and even on the political condition of Cuba.

His great work, 'Kosmos,' which it had been the main object of his life to produce, shows what a profusion of clear recollections of natural phenomena was stored up in his capacious mind, and with what eloquence he could put forth that extraordinary knowledge. To the first part of the last volume I specially called your attention at the preceding Anniversary, as in it the author had descended from the heavens and atmosphere as treated of in his earlier volumes, and dealt more specially with that planet to which my own occupations have been restricted.

We have yet to receive the final instalment of the veteran philosopher, and doubtless the very last words he wrote will be treasured up and given to the world exactly as he left them. And if the pen fell from his hand, leaving that last sentence unfinished, let no one endeavour to complete it; for the true peroration of this great work will be found in the eulogiums which will everywhere be recited in honour of its author.

As one of the first acts of the Council of this Society was to place Humboldt at the head of our Honorary members, so he lost no opportunity of testifying the deep interest which he took in our welfare, often speaking of our volumes in terms of strong approbation. Always regretting that his travels had not extended to Hindostan and the Himalyan Mountains on the one hand, and to Africa on the other, he ever strove to promote researches in both these regions.

In his 'Asie Centrale' we perceive how sedulously he had studied the works of every geographer and traveller which had shed light upon the configuration, direction, and altitude of the great chains which traverse Asia; the labours of all our English authors and explorers of the great Himalya range being thoroughly well known to him. Panting to obtain an insight into the regions lying to the north of that chain, it was through his stimulus that the expedition of the brothers Schlagintweit was organized, and through his influence that these young men, whose scientific acquirements he highly valued, were sent to push their researches farther to the north than previous explorers. The delight which he took in their progress was seen in the warm and affectionate commendation he bestowed on them for traversing the Kuen Lun and reaching the Trans-Himalyan region of Yarkand. I can also well imagine the profound sorrow he must have felt when Adolphe Schlagintweit, the one of these

three brothers who has fallen a victim to his zeal, was assassinated before the walls of Kashgar; all his valuable observations and papers being lost with the death of the courageous traveller.

Keenly intent upon every exploration of the interior of Africa, Humboldt was naturally proud that his countrymen Overweg and Barth should successively have distinguished themselves in the British expedition which commenced under the guidance of Richardson, and it was mainly through his exertions that the accomplished young astronomer Vogel was added to the list of those who were endeavouring to define the geography and condition of inner Africa.

That Humboldt lived unto his ninetieth year is chronicled; but knowing well his habits, I may be permitted to say that in reality he lived upwards of a century: for, whilst the average daily amount of sleep of man is seven or eight hours, the rest he took from his earliest youth never exceeded four hours; all his waking moments being so vigorously and profitably employed as virtually to constitute a century of highly-strung mental existence.

Though he was a good listener, and a clear questioner whenever he sought to obtain knowledge from others (which, by the bye, he never forgot), it may be also said of him that in his long career he talked more than any one of his contemporaries with whom I have been acquainted. His correspondence was particularly extensive, and the piles of letters which he had to answer almost overpowered him. And yet a few months before his death he not only took the trouble of replying to many of his old scientific correspondents, but I have before me the copy of a long and kind letter which he wrote last year to our worthy associate Mr. John Brown, with whom he was personally unacquainted, thanking him for the present of his volume on 'Arctic Discoveries.'

Nor is it to be forgotten that he took particular delight in conversing with women, and that he was a great favourite with them; his soft voice and persuasive diction, in which he conveyed instruction without hard words or ostentation, being peculiarly grateful to the gentler sex, to say nothing of that *piquant* irony in which he frequently indulged.

But it was not merely by his courtesy and correspondence that Humboldt won the affectionate attachment of mankind. He was invariably the ardent and disinterested promoter of merit and desert, under whatever form they were presented to him. Every young man struggling with difficulties, who had shown signs of energy in the cause of science, was sure to find in him a

zealous and generous protector.* Thus, as it was the constant practice of his life to spare no trouble in sustaining those who had need of support, his loss will be deeply felt by men of science, art, and letters, not only in Germany, but throughout the civilized world.

During the career of the illustrious traveller, we know that he paid many visits to England, one of the first of which was in 1799, when he became acquainted with Robert Brown, and to this event I shall allude in speaking of that great botanist, for whom he had the sincerest regard. It was, indeed, one of his many good acts, that he induced the King of Prussia to bestow on that Robert Brown, so little known to public men in England, the high honour of the Order of Merit.

When in England in 1826, though then only fifty-seven, he had been before the world as a celebrated author during so many years that he was already looked upon as becoming old. But from that date he was destined to play for thirty-three years a new, and in many respects, a more important part. In 1827 he took up his residence in Berlin, and soon became a favourite of Frederick William III., and afterwards of the present Sovereign of Prussia. There are those, I know, who have regretted that the philosopher was thus converted into the courtier, but this opinion has no good foundation. In truth, he found in King Frederick William IV. a reciprocity of sentiment and a love of knowledge which might, with his influence, be turned to great advantage in the encouragement of all those who were busily engaged in the pursuit of scientific researches, and most efficaciously and warmly did Humboldt work on in this praiseworthy career. Impressed with the strong desire to aid every meritorious man of science, he was indeed fortunate in being the bosom friend of a warm-hearted Monarch, who invariably responded to his call. No one who has witnessed the free and unreserved converse between Humboldt and his Sovereign could fail to be convinced, that he

* Whilst these pages were passing through the press, I perused in the 'Boston Weekly Courier' of the 26th May the eulogy of Humboldt, read before the American Academy of Sciences by my eminent friend Agassiz, informing the public how, at a critical period in his youthful days, when from want of means he was about to leave Paris, the young naturalist was unexpectedly relieved by a liberal donative from the great traveller, sent to him in the most delicate manner, and was thus enabled to continue studies without which his career might have been nipped in the bud. After an eloquent analysis of the various works and generalisations of the deceased, and a warm encomium of his deep-searching volume, the 'Views of Nature,' Agassiz says with truth,—"Every child in our schools has his mind fed from the labours of Humboldt's brain wherever geography is no longer taught in the old routine."—June 15, 1859.

never played the courtier's part but in the hearty desire of attaining some good and noble end. His liberal opinions were indeed so well known, that an occasional witty sarcasm on any monarchical abuse was tolerated in him as coming from one who, he himself said, was styled a French Jacobin.

Visiting Prussia in 1840, eleven years after the Siberian journey of Humboldt, and repeating my visits in each following year whilst I was exploring a great part of the empire of Russia, I invariably received from him the most important suggestions, as well as the most marked attentions. The great traveller, having performed his long journey in an incredibly short time, was well aware that he had done little more than sketch out broad views of the geography, natural history, ethnography, and terrestrial magnetism of the vast regions over which he had passed, and consequently he much desired that other men should solve various problems which he had only time to touch. One of the largest of these problems that remained to be worked out was the geological structure of Russia; and when he saw the determination of my associate, De Verneuil, and myself to endeavour to elaborate the true geological succession of Russia in Europe and the Ural Mountains, he took especial pleasure in assisting us. In saying to me, "You will now be able to tell us the true age in the geological series of those sandstones which occupy so vast a region in the ancient kingdom of Permia," he gave me the first impulse to pursue researches in several of the distant provinces of Russia which ended in the establishment of the Permian group of rocks, as the youngest of the palaeozoic formations, and in my attaching to it a name which has now become current in science.

Again, in his luminous conversation and writings on the great Aralo-Caspian depression of the earth's surface, he stimulated me to those endeavours which showed how in that vast low region, the physical geography of which he had described so well, the geologist could bring forth evidences of a transition from a lacustrine condition, through a brackish water period, into one of purely marine conditions.

With his views on the grandeur of the phenomena by which many ancient igneous rocks, differing from the eruptions of mere volcanos, have been extruded from fissures in the crust of the earth, and have been spread out over vast spaces, I agree, in common with his eminent friend M. Elie de Beaumont, as shown in my last Anniversary Address. Assuredly no man of his generation had seen more of

volcanic rocks than Humboldt, and his judgment on this point must be viewed with profound respect.

During my last conversation with him at Potsdam, in September, 1857, I grieved to see that his physical powers had become much feebler in the lapse of a year, and that he was under the necessity of leaning on his servant as he walked. And when to my sorrow I also perceived that the health of the Sovereign of all others who so heartily cherished the cultivators of science and letters was failing, and that this change was making a deep impression on Humboldt, I feared that I might never more converse with the illustrious man. But whilst the frame was gradually bending and giving way, the bright intellect continued clear to the last; and one of his letters, which was written to me only a few weeks ago, exhibited the same suggestive mind and active interest in obtaining knowledge as in the best days of his bodily vigour.

One of these precious letters received last summer displays that love of youthful persons by which Humboldt was always characterized. The joy which the veteran philosopher experienced on possessing "cette patience de vivre" (as he termed his long life) which had enabled him to witness the happy union of the eldest daughter of our beloved Sovereign with the heir to the crown of Prussia, and to join in welcoming the accomplished Princess Royal to Prussia, is expressed in terms which showed how justly he estimated the influence which her graceful and captivating manners, and her good sense and right feeling, must produce upon the nation of her adoption. Even in the very last letter which I received from my illustrious friend, dated the 15th of last March, though it chiefly related to the means of facilitating the investigations of a Prussian traveller, from Tunis southwards, into the wilds of North Africa, there is a strong and warm expression of the gratification which he had felt in having lived to be present at the baptism of the first child of the Prince and Princess Frederick William, and of his conviction that his happiness was shared by all good Prussians.

This was, I apprehend, the last public ceremony at which Humboldt assisted. The lines with which he concludes his letter are penned with a tremulous hand, and in reply to my inquiry after his health he writes: "Mes forces musculaires reviennent très lentement, et je souffre sous le poids d'une correspondance de 1800 à 2000 lettres et paquets par an. Une sorte de célébrité qui se répand avec l'âge, et s'augmente à mesure que l'on devient imbécile."

Valuing the knowledge I obtained personally from him, and the hearty kindness and zeal with which he uniformly aided me, I would that it were in my power to render ampler justice to so great and so good a man. But many of the works of Humboldt, particularly his records of the physical phenomena of the universe, lie beyond the critical scope of a geologist like myself. These works will doubtless be crowned with appropriate laurels by those who can duly scan their lofty merits. This humble offering comes from one who, profoundly admiring the works of the great philosopher which lie in his own line of research, will ever be proud of the recollection that he was encouraged in his career by the truly illustrious Humboldt.*

All praise to the gallant and intellectual nation to which he belonged for the respect and love which they bore to him through life, and for the profound sorrow which they testified on his decease. Never probably was the body of any man followed to the grave with deeper and more touching respect, nor by a larger number of people of all classes, from the Regent and Prince Royal of Prussia and the other members of the Royal Family to the humblest citizen. And when the account of his last moments was conveyed to the Monarch whom he had so long and so faithfully served, I feel convinced that the oppression of mind caused by a severe malady would be dissipated, and that all the affectionate recollections of the benevolent Sovereign were revived, as he wailed over the death of his bosom friend.

When presiding over this Society in the year 1853, I opened my Address by lamenting the death of the great Prussian palaeontologist and geographical geologist, Leopold von Buch, and said that "in losing him we were left almost alone with Humboldt as the last of that race of philosophical generalizers who are capable of placing before us in one work all the natural features and contents of a vast region."

It was on that occasion that the deepest feelings of Humboldt were poured forth in a letter in which he announced to me his irreparable loss. "Suis je destiné," he wrote, "moi vieillard de 83 ans,

* Among the numerous portraits of Humboldt, there is no one which comes so home to the geographer as that little sketch of the veteran who, seated in his cabinet, is surrounded by his books, packets of correspondence, and the map of the world which he had so illustrated. In the corner of this coloured lithograph is his own affirmation that this is "Ein treues Bild meines Arbeits Zimmers als ich den zweiten Theil der Kosmos schrieb." A very striking little photograph of him, the last likeness which was taken, has been sent me by the brothers Schlagintweit, who were with him just before his last illness, and to whom he granted this favour.

de vous annoncer, cher Chevalier, la plus affligeante des nouvelles, à vous pour lequel M. de Buch professait une si tendre amitié, à ce grand nombre d'admirateurs de son génie, de ses immenses travaux, de son noble caractère." Then, after describing the course of the malady which caused the death of the great geologist, and recapitulating their long and unvarying intimacy during 63 years, Humboldt adds:—

" Ce n'était pas seulement une des grandes illustrations de notre époque, c'était aussi une âme noble et belle ! Il a laissé une trace lumineuse partout où il a passé. Lui pourroit se vanter d'avoir énormément étendu les limites de la science géologique, toujours en contact avec la Nature même. Ma douleur est profonde : sans lui je me crois bien isolé ; je le consultai comme un maître, et son affection m'a soutenu dans mes travaux."

Expanding the term "geological science" into "all science," let these his own lines, penned in the moment of grief for the loss of his most valued friend, be applied by geographers to the memory of the great man himself, whom we all consulted as a master, and we then have in his own emphatic words the true characteristics of the universal Humboldt.

THE ARCHDUKE JOHN OF AUSTRIA.—The last surviving brother of the Emperor Francis, the beloved "Unser Franz" of every Austrian, has paid the debt of nature at the good old age of seventy-seven. One of nine brothers, most of whom were distinguished for their acquaintance with the sciences, and one of whom—the Archduke Charles—was the able opponent of Napoleon in the art of war, our deceased foreign member may, without any flattery, be singled out as a Prince who, loving geographical science, was at the same time an accomplished mineralogist and botanist, and who has passed a life so full of good deeds, that his memory will ever be cherished throughout Germany.

Brought up as a soldier to oppose the armies of revolutionary France, the Archduke was eminently successful when, leading the faithful Tyrolese, he commanded the army of Italy, which, in 1809, defeated the Viceroy Eugène Beauharnais at Sacile, on the Licenza (N.N.E. of Venice), and forced him back to the Adige, after a heavy loss. Then followed a short period of glory for Austria; for though Napoleon was master of the city of Vienna, he lost his prestige in the sanguinary repulse which the Archduke Charles inflicted on him at Aspern; and the Austrian capital was so crowded with wounded and dying French soldiers, that, if not reinforced

by some extraordinary intervention, it is quite possible that Vienna in 1809 might have been to the great captain what Moscow was to him in 1813. Unfortunately for the Austrian cause, the Archduke John had before this been ordered to retire from the north of Italy, and to unite with the main army near the metropolis.

Every old soldier knows what must have been the effect of such a command on a hitherto successful army, which was ordered to retreat over the parched plains of Italy, and then through mountainous tracts, for a vast distance.

Losing the heavy train and guns of a noble army of 40,000 to 50,000 men, he eventually reached Presburg on the Danube with scarcely the half of that number. But whilst this was the poor relief brought to the left flank of the Austrian army, what was the reinforcement which the Emperor of the French received in Vienna? Why, that of the very generals and soldiers who had been held at bay by the Austrians in Italy. These were now converted into a triumphant advancing force, which, when led by Macdonald, enabled Napoleon to win the hard-fought day of Wagram.

Singularly modest, the deceased Archduke never spoke of his own conduct; but, extracting information from those who had been his companions during those terrible campaigns, I firmly believe that when the truth is ascertained, he will be entirely exonerated from the blame, attributed to him by historians, of not having promptly aided his brother Charles in the battle of Wagram; the fact being that the counter-orders sent to him prevented his coming up till the main Austrian army was in full retreat.

Naturally disappointed and disgusted at the results of a war which had humbled Austria after her heroic efforts, the Archduke betook himself to those mountains of the Styrian Alps where I first made his acquaintance, when exploring their defiles in 1829 in company with Professor Sedgwick. At his favourite Bad-Gastein he welcomed us with frankness and cordiality, and after a table d'hôte dinner at mid-day, where ministers, generals, and geologists were commingled, we made a most enjoyable excursion to the foot of the snow-covered peaks which the Prince had ascended, and of which he gave us mineralogical descriptions. Never shall I forget the joyous conversation he maintained, always full of noble and liberal sentiments, until late in a fine starry, moonlight night we regained our hostelry. Nor can I be oblivious of the kindness with which on another day, just after sunrise, he laid out upon the floor of his little bed-room at the curate's house a large and detailed map of all parts of the Austrian Alps, and how we went upon our

knees with himself whilst we examined upon the map every recess of those mountains.

In the following year, being at Vienna when the present Emperor was born, I met with marked attention from the Archduke John, who was the chief of the Engineer corps; but it was on revisiting Grätz, where I had been in the previous year, that I best learnt how to admire him. There it was that he had already established that scientific institution, the Johanneum, in which the natural history productions of the Austrian Alps were so admirably displayed, and where able men, attracted thither by the good Prince, expounded the truths of geography, botany, mineralogy, and mining.

It is enough to say that here taught and wrote my eminent and valued friend Haidinger, now worthily at the head of the geologists of Austria, who took a leading part in founding the Imperial Geographical Society, and who is constantly affording us valuable information. It was by visiting the valleys of those Alps in these and subsequent years, where the industry of the honest and trusty Styrian works the iron-mines, that I could still better estimate the noble and disinterested character of this true-hearted Austrian Prince.

Visiting him at Frankfort in 1848, when he was Reichs-verweser of the German Confederation, and calling on him at his first and only hour of leisure, six in the morning, I learnt from himself that he sighed to regain those mountains amidst which I had known him to be so happy. Thither he did return, and there ended his days in the society of the wife of his choice, and blessed with an accomplished and promising son, the Count de Meran, now in the Austrian army.

The Archduke John, who had visited England and remained some time in the year 1816, had a true regard for many of our countrymen with whom he associated; and of those now living, I have especially heard him speak in affectionate terms of that pattern of an English gentleman, our associate, Sir Thomas Dyke Acland.

As not only Austria but all Germany mourns his loss, so your President, who was honoured with his friendship, has striven to do honour to this virtuous and distinguished member of the Imperial house of Hapsburg.

M. Gerold MEYER, of Knonau, the noted Swiss historian and geographer, who died recently, was one of our foreign Correspondents. Being the keeper of the archives of Zürich, so rich in the original documents relating to the history of Switzerland from the ninth to the fifteenth century, he detected letters which

some English readers will find an interest in perusing, viz., the correspondence of our Elizabethan divines with the Swiss reformers, which will, I understand, be published by the Parker Society under the name of *Zürich Letters*. M. Meyer was the author of the '*Erdkunde der Schweiz*,' and the projector of, as well as largely a contributor to, that instructive work the '*Gemälde der Schweiz*,' of which nineteen volumes have been published.

ROBERT BROWN.—At the head of the men of British science who have been taken from us since the last Anniversary, I at once place the name of that eminent Scotchman, Robert Brown, who, having earned for himself the title of the "Prince of Botanists," had won, at the same time, our kindest remembrance for having taken an active part in the foundation of this Society.

Born at Montrose in 1773 (his father being the Episcopalian minister of that place), young Brown there received his early education, which was completed by a course of studies in the Universities of Aberdeen and Edinburgh. From 1795 to 1799 he served as assistant-surgeon, with the rank of ensign, in a Regiment of Scottish Fencibles; and it was in the last-mentioned year (after the Irish Rebellion was quelled) that, during a leave of absence, he was kindly befriended by Sir Joseph Banks, who shortly after proposed to him to become the naturalist of that world-wide scientific expedition which, sailing in 1801, and returning in 1805, enabled our deceased member to make collections, discoveries, and comparisons in Australia and other distant lands, which threw an entirely new light on the geographical distribution of vegetable life.

As the late President of the Royal Society has already pointed the attention of men of science to the chief works of Robert Brown, and as, doubtless, his memory will be still more minutely scanned by the President of the Linnean Society, of which body he was the main-stay for many years—whether as Librarian, Secretary, Vice-President, or President—it is unnecessary that I should on this occasion enumerate all those publications on which his fame rests. For these works he received numerous distinctions, having been elected an honorary member of every academy in Europe, including that great scientific honour, of being one of the eight Foreign Associates of the French Academy of Sciences; whilst he had also received from the Royal Society the highest distinction of that body—the Copley Medal.

In reference to our own Society, let me say that, in 1830,

Robert Brown, who was a constant attendant at the Raleigh Club of Travellers, united with Sir John Barrow, Mr. Hobhouse (now Lord Broughton), Mr. Bartholomew Frere, myself, and other members of that club, in drawing out rules and a plan for the establishment of a projected Royal Geographical Society. For this purpose we held several meetings as a provisional committee, at all of which Mr. Brown was present. We also printed documents explanatory of our project, which were duly circulated, including the laws which still regulate the Society, and which, on my own proposal, were essentially those of the Geological Society.*

As no words of mine can do sufficient justice to the merits of a man whose eulogy has been, or will be, chaunted by all the eminent botanists of the age, I willingly extract some sentences of a letter which I received a few months ago from Baron Humboldt, who, after alluding in feeling terms to the death of his former companion Bonpland, and to the oldest of the three (himself) being left alone, thus speaks of our deceased member:—"The enormous loss of " Robert Brown is perhaps more deeply felt in Germany and " other countries than in England. It was the protection af- " forded to me as early as 1799 by Sir Joseph Banks which first " made me acquainted with that Robert Brown who afterwards " gave so vast an impulse to the three great objects which must for " ever remain attached to his name—the minute development of " the relations of organization in natural families, the geography " of plants, and the estimate of their numerical proportions. The " physiology of plants, and an elaborate dissection of them, con- " stituted invariably with him the foundation of all systematic " botany. In short, Bonpland, Künth, and myself had the happiness " in 1822 thus to dedicate to him our 'Synopsis of the Equinoctial " Plants of the New World':—

" ROBERTO BROWNIO
Britanniarum Glorie atque Ornamento
Totam Botanices Scientiam
Ingenio mirifico complectenti."

These remarkable words, coming from such a source, and constituting an epitaph which should be inscribed on the tomb of the

* It is here my duty to state that of which I was unaware when the Society was founded, that another individual had early in 1830 not only sketched out the establishment of a Geographical Society like our own, but had enrolled in it many names. That person was my esteemed and distinguished predecessor, Admiral W. H. Smyth, whose services to us were afterwards tested by the skill and zeal with which he administered our affairs; and who, by giving a new impetus to us when we were in a declining state (1849), was really the renovator of our body.

great botanist, were written seventeen years before he received the highest honour of the Royal Society, and thirty-six years before his decease.

The truth of the above-mentioned remark of Humboldt, that the loss of Robert Brown has been more felt in Germany and other countries than in England, has very recently been realised by the publication of an eloquent éloge of the deceased by his great German botanical contemporary, our associate Dr. Ch. von Martius, of Munich, who opens his essay by declaring that, next to Linnaeus, the three other names ever to be memorable in the history of botany are those of Jussieu, De Candolle, and Brown.

Referring my hearers to the full translation of this treatise * for the clearest definitions of the researches and discoveries of the deceased, in establishing the surest foundations of phytogeography, as dependent on the morphology, development, geography, statistics, and history of plants, let me cite one or two sentences from the essay of the eminent Bavarian :—

" Not one of those essential parts of the plant on whose manifold forms and combinations depends the glorious wealth of the vegetable kingdom was passed over by the searching eye of Robert Brown. From the microscopic germ of the moss and the vegetable ovule to the flower; from the stamen and its pollen to the carpel and the fruit, he examined and compared all the organs in plants, of the most diverse orders, and in all stages of development.

" Governed by the deepest sense of natural truth and natural relations, he established the soundest views upon the nature and developmental history of these organs. Thus he vastly contributed to the consolidation of that theory (morphology) which gives to systematic botany its true claim to rank among the sciences.

" In these morphological researches of Robert Brown there was a peculiar affinity to the spirit of the Germans, and thus this is a deep-rooted cause of the powerful influence which he has exerted upon botany in our country."

After a lucid and critical review of his scientific labours, Dr. von Martius passes to the consideration of what he justly terms the fairest and most glorious aspect of the man—his moral nature. And here, together with all my countrymen who knew Robert Brown, I can bear witness that our foreign contemporary has struck the right note when he thus speaks :—

* See 'Annals of Natural History,' vol. iii. p. 231.

" Robert Brown was a truly great and good man. Love of truth above all things, calmness, sincerity, modesty, tender sensibility, and goodness of heart—these features of his character stood constantly under the government of a penetrating and massive judgment. So energetically did these characteristics regulate his activity as inquirer and author, that we may affirm that every act of his investigations, and every assertion in his writings, bear the stamp of this perfectly-balanced character.

" It is indeed often the case that an extraordinary intellect rests, like a column, upon a slender moral foundation; but Robert Brown's rose, like a pyramid, from a broad and strong base. In recognition of this worthy combination, all naturalists offered admiration to his intellect—to his character, reverence and love."

" It has been thought strange," continues Dr. von Martius, " that a man of such extraordinary scientific importance, to whom the homage of the world was offered, played no prominent part in public life, or in the brilliant society of London."

On this last point I may, however, say that, although my deceased friend communicated much pleasure to others when surrounded by a small social circle, he had little relish for fashionable or political society. Still it is deeply to be regretted, that those who occupy lofty stations in our land should not have better appreciated so remarkable a countryman. Indeed, I cannot forget the remark made to me by Humboldt when, in 1842, in accompanying the King of Prussia to England, he honoured me by meeting the "Princeps Botanicorum" at my own house, "that it was painful to him to find that a man of such true eminence as Robert Brown was almost ignored among the higher circles of English society."

I may state that, in the latter years of his life, this great botanist devoted much of his time to the minute examination of those fossil plants, the structure of which is admirably exhibited by having been preserved in crystalline matrices, siliceous or calcareous; and he spared no expense in having these specimens so cut and polished as to facilitate the endeavours of his successors to follow up a line of research in which he modestly styled himself only a pioneer.* For, although he had established some of the

* His highly instructive collection of fossil plants has been bequeathed by Mr. Brown to the British Museum, on the condition of the Trustees allowing it to form part of the Botanical Exhibition, under the charge of the Keeper of Botany. This provision has been complied with; and the collection, as well as the imitable portfolios of the drawings of Ferdinand R. Bauer, also left to the Trustees, are now under the charge of Robert Brown's valued friend, Mr. John Bennett, his successor as Keeper of Botany in the British Museum.

noblest generalizations in the relations and classification of living plants, he was much too sagacious and circumspect to pronounce hastily on the affinities between the lapidified, extinct groups of vegetables and those which now prevail.

Those persons who, like myself, were intimately acquainted with this distinguished and benevolent man, can testify that in every action of his life he preserved the most scrupulous rectitude of conduct, dictated by the sincerest love of truth; * and that, whenever occasion required, he gave ample proofs of a lofty and independent spirit. No event within my recollection called forth, in a more marked manner, his love of independence, than when, in the year 1830, a great majority of the men of science having publicly expressed a wish that Sir John Herschel should become the President of the Royal Society, a Prince of the blood royal was proposed in opposition to the man of our choice. Then it was that, co-operating with my deceased friend, I saw the influence produced upon my associates by the honest and unflinching exertions of this respected leader in science. The result of that struggle, as is well known, was the election of the Duke of Sussex by a small majority; whilst it is a fact highly creditable to the memory of that kind-hearted and accomplished Prince, that he subsequently lost no opportunity of paying marked attention to those Fellows of the Society who had conscientiously supported his opponent, at the head of whom stood Robert Brown. In truth, his Royal Highness, to his great honour, farther distinguished himself, in the year 1838, by welcoming Herschel on his return from the Cape, and by presiding over the entertainment given to that great astronomer by 400 men of science, at which I had the honour of acting as a vice-president in union with Robert Brown.

As an attached friend of the dying philosopher, it was my privilege to witness how his noble, calm, and unruffled spirit was preserved to the last ebb of life; and it was a sad but gratifying solace to me, that I was one of his scientific associates who, well knowing how to estimate the value of the man, had the privilege of following to the grave the remains of the truly illustrious Robert Brown.

HALLAM.—The celebrated historian, Henry Hallam, has gone from among us, full of years and of honour. Many an abler pen than

* My friend Dr. Fitton also possesses a letter from Baron Humboldt to himself, in which the great traveller, besides an enumeration of the works of Robert Brown, also dilates on his many private virtues, as well as on the simplicity of his character.

mine will, doubtless, pay abler tributes to his memory, though no one of his friends entertained a deeper regard for him than myself.

Disdaining to court popularity, and dealing sternly with those whose writings or conduct savoured of untruthfulness, he possessed at the same time as kind and as genial a nature as it was ever my good fortune to estimate. Admiring his character throughout no short space of time, I can fairly say that with every year my respect for him increased. Whether I watched him and felt for him when his strong mind was bowed down by those domestic afflictions which succeeded each other in so lamentable a manner, or when, rising out of his sorrows, he poured forth his terse and forcible conversation, and was the charm of that social circle in which he shone, even amidst such contemporaries as Sydney Smith or Samuel Rogers; in every trait of his life he won my regard, and invariably impressed me with the sincerest esteem for his whole character.

Having gained a wide renown as a historian and a man of letters, Mr. Hallam had a real pleasure during the last quarter of a century in upholding and supporting all those branches of knowledge, whether in science or in art, which elevate humanity. Thus reverting to the mathematical pursuits he had cultivated at Cambridge, he was elected a Fellow of the Royal Society in 1821; and seeing how the then new science of geology was opening out great and fundamental truths of nature, he also willingly joined the Geological Society. In 1830 he was one of those who founded the Royal Geographical Society, and having been more than once upon our Council, he invariably afforded us his warmest support, and has often spoken to me in commendation of our Journal.

Among the numerous honours which were deservedly heaped upon him by the various academies of Europe, there was no distinction which Mr. Hallam justly valued more, than that of being selected as the Historiographer of the Royal Academy of Arts of this metropolis. Succeeded as he has worthily been in that post by my eminent friend Mr. Grote, I may here be permitted to quote a few words of the eloquent eulogium which at the last anniversary festival of the Royal Academy fell from the lips of the author of the 'History of Greece,' as illustrative of the character of his great predecessor:—

"There lives in his chapters a conscientious sense of the almost judicial obligation of an historian, the obligation of studying with care original and contemporary authorities, but at the same time of rising above contemporary prejudices, and of judging with equitable

independence the ever-renewed and ever-varying party-conflicts in history. I know no compositions in which these first conditions of historical worth, copious original research, and equitable criticism, are more constantly combined than in those of Mr. Hallam. And it is, in my judgment, an additional merit that his History is devoted to the gown rather than to the sword; that he has left to others the exciting tales of battles and sieges, of exhibitions of armed force, either in strategic movement or tumultuous outbreak—*pugnas et exactos tyrannos*—which have always charmed the popular mind in description, however distressing they may have been, in the reality, to the generations that underwent them. Mr. Hallam has set before us the energies of the unarmed citizen; the pacific manifestations of the human mind, in its legal and institutional development; in philosophy, literature, and poetry; and though last, not least, in those Fine Arts which form the collective bond of sympathy among the present company. To succeed to an historian who to these literary accomplishments added all the social excellences of an English gentleman, is a distinction of which any living author may be proud."

As a Trustee of the British Museum, Mr. Hallam's just appreciation of works of ancient art, and his thorough acquaintance with the rarest books, were combined in him with the soundest judgment in the management of the establishment; and when his last illness fell upon him, and deprived the Board of his solid advice, every trustee felt as myself, that he had lost the invaluable support of a just and enlightened associate.

The chronicler who may endeavour to render justice to the memory of the deceased will necessarily dwell upon those records of the Middle Ages which demonstrate how our liberties arose, and then follow out the processes by which our freedom was consolidated and maintained, as put forth in that noble work 'The Constitutional History of England,' which breathes such a racy love of free and well-balanced institutions.

It is my humbler province only to indite these few lines expressive of my admiration of the scholar and historian who was an honour to our age, and to record with just pride that I had the privilege of enjoying the personal friendship of the great, good, and virtuous Henry Hallam.

THE EARL OF RIPON.—In continuing this Address as usual with some allusions to the Fellows of our Society who have been taken from us in the past year, I will not endeavour to put before you a

chronicle of the progress of each person through life, but simply dwell on those circumstances which connect that individual with our geographical pursuits, accompanied by a very brief sketch of his public character.

In alluding to public men, I naturally first notice the career of the patriotic and accomplished nobleman, our first President, the Earl of Ripon, who, having reached his seventy-seventh year, died in January last. Entering into public life in 1804, and into Parliament in 1806, Lord Ripon was connected by official duties with the successive Governments of the Duke of Portland, Lord Liverpool, Lord Castlereagh, and Mr. Canning, and on the death of the last of these statesmen was, when Viscount Goderich, for a brief space the Premier. Subsequently he joined the Ministry of Earl Grey, and was Secretary for the Colonies at the time when, at the request of some of the founders of this Society, he became our first President. During the period of his Presidency he never failed to take a lively interest in our welfare; but feeling that the duties attached to an important office in the State were incompatible with a due attendance to our concerns, he relinquished the office into the hands of his friend Sir John Barrow, who had, in fact, taken an active part in inducing his Lordship to become our leader.

Though the late Lord Ripon retired from office in 1834, yet on the return of Sir Robert Peel in 1841 he undertook first the Presidency of the Board of Trade, and afterwards that of the Board of Control, which last place he held until the dissolution of Peel's Government in 1846, when he retired from public life.

In this last official post Lord Ripon showed an anxious desire to promote, by every means in his power, the advancement of scientific and useful researches in the interior of India, as I can testify; for upon my representing to him the great advantage which would accrue from selecting by preference those medical students who had received a good scientific education for Indian service, he willingly nominated as an assistant-surgeon the son of my venerated friend Dr. John Fleming the celebrated Scottish naturalist, and Dr. Andrew Fleming has since well requited his Lordship's aid by arduous geological and other researches.

Though it is not within my province to trace the public life of the late Lord Ripon, still it is very gratifying to me to be able to say that he was invariably and intimately connected with all the liberal parliamentary measures which were passed during his official career. Thus, whether we turn to the long debates which

led to the emancipation of the Catholics, the abolition of the Slave Trade, the repeal of the Corn Laws and of the Test and Corporation Acts, and even to the Reform Bill itself—to one and all of these national enactments he gave his steady support. He was, indeed, mainly instrumental in propounding one of those great questions—a change of the Corn Laws—to the House of Commons, and finally he carried another (the Abolition of Slavery) through the House of Peers.

Of our first President let me also say, that in the last years of his life he was specially exempt from that failing—the passion for worldly distinctions—which, usually increasing with advancing years, has of late prodigiously increased. For although he might surely have obtained the honourable distinction of a broad riband at the hands of his Sovereign for his long public services, he never sought it, but lived on unostentatiously and happily in the bosom of his attached family, and surrounded by friends who best knew how to appreciate his private worth and public virtue.

WARBURTON.—In the decease of Mr. Henry Warburton I have lost one of my earliest geological friends,—one to whom I was indebted for much sound advice and assistance when I first wielded the hammer of the geologist, and became an author.

Mr. Warburton, who had received a good classical and mathematical education at Cambridge, where he was distinguished, devoted himself much to the pursuits of physical science. At the early age of twenty-four, and in the year 1809, he became a member of the Royal Society. Joining the Geological Society in 1803, or soon after its foundation, we find that in the year 1814 he was already one of its secretaries, his friend Wollaston being then also upon the Council, and in 1816 he became a Vice-President of the same body. When the Geological Society acquired a Royal Charter, the name of Henry Warburton was associated with the names of William Buckland and George Bellas Greenough in the deed of incorporation. The progress and welfare of that Society were, indeed, ever dear to Mr. Warburton; and although his name appears rarely in the Geological Transactions (his principal memoir being on the Bagshot Sands),* I can appeal to all his surviving geological contemporaries for a confirmation of the fact, that his literary labours were unceasing, whether in drawing up those rules and regulations whereby the rising Society was held together, or in assiduously preparing

* Transactions of the Geological Society, vol. i., 2nd series, p. 48.

for the press any memoir which was communicated by an unpractised writer.

In subsequent years, and when he sat in Parliament (i. e., from 1826 to 1848), Mr. Warburton was placed during the years 1843-4 at the head of that Geological Society for which he had so long and so zealously laboured. Regardless of his own reputation, and occupied with public affairs and close committee work in the House of Commons, he neglected to write out and print his Anniversary Addresses, though he delivered them extempore and with much effect from the chair in Somerset House.

It will ever be remembered to the honour of our deceased member, that he was the intimate friend of the illustrious Wollaston, of whose writings and discoveries he was well qualified to judge; for Henry Warburton was never superficial, and every subject with which he grappled was thoroughly mastered. As in commencing my scientific career I looked up to him as a guide, so shall I never forget my last interview with Wollaston a few days before his death, when Warburton, in watching over his friend, was taking down the words of that bequest which the great philosopher made to the cultivators of the science of geology.

The unwillingness of Warburton to appear as an author in his own name, founded, I believe, on his keen sense of the necessity of rendering every phrase precisely accurate, soon after proved of signal disadvantage to the memory of the man who of all others he most truly loved and respected. The biography of the great Dr. Wollaston had to be written, and Warburton undertook the task; and though I have reason to think that he had made some progress in the work, he never completed it. That this delay prevented the Éloge of Wollaston being penned by Cuvier himself, is, indeed, too true, inasmuch as that great man, then Perpetual Secretary of the French Academy of Sciences, urged me (during one of my visits to Paris) to induce Mr. Warburton to delay no longer, and furnish him with the necessary materials to do justice to our deceased countryman, as one of the eight Foreign Members of the Institute. Yet with all this procrastination as respected the publication of any work in his own name, Mr. Warburton, I repeat, afforded constant literary aid to all those who were struggling on to advance science, and was, in truth, a terse and lucid writer.

In like manner his Parliamentary contemporaries will, I am sure, bear me out when I say, that if a bill had to be accurately and perspicuously drawn, or the Report of a Committee to be well put

together, Mr. Warburton would spend days and nights in the laborious work, which was to him a labour of love. The voluminous Report on the Coal Trade of England, published by order of the Houses of Parliament, is one of the most pregnant proofs of his assiduity as a compiler, and, at the same time, of his knowledge as a geologist.

His Anatomy Bill, in the carrying out of which he laboured many years, is also to be specially mentioned in dwelling upon his scientific merits; whilst those who contend for the advantages flowing from such a thoroughly liberal system of education as has been sustained by the eloquence of a Brougham, a Mackintosh, a Romilly, and others, will never cease to respect the memory of Henry Warburton as one of the founders of the University of London, and a most zealous champion of its rights and liberties.

Retiring from public life in 1847, he returned to his early relish for mathematical studies, and produced two papers "On the Partition of Numbers," and "On Permutations and Combinations," which were printed by the Cambridge Philosophical Society. A scientific contemporary has said, that "both these papers show a great command over the German factorial notation, and add several curious theorems to their subjects."^{*}

In private life Mr. Warburton had many attached friends, among whom I was one, in common with Wollaston, Chantrey, and many of those cultivators of science and art who, setting aside some peculiarities of manner, esteemed him for his strong mind, sincerity, and worth.

Those who, like myself, truly valued the man, and who visited him in his house in Cadogan Place, had to pick their way through piles of books and bottles of acid, with which every room, and even the passages, were encumbered, until they reached the back-attic, into which the philosopher was driven. But this singular mode of life was not caused by parsimony; for Mr. Warburton was most liberal in his donations for the advancement of knowledge, and in addition to large sums contributed in many other ways, I may state that he gave 1,000*l.* towards the publication of the first geological map of England, as prepared by his distinguished associate, one of our former Presidents, the late Mr. Greenough, like whom he was one of the earliest members and supporters of the Royal Geographical Society.

* President's Address to the Royal Society, "Proceedings R. S." 1858, p. 556.

Lieutenant Henry RAPER,* eldest son of the late Admiral Raper, so well known for his improvements in maritime signals, was born in the year 1799, and entered the navy at the early age of twelve, on board the *Mars*, of 74 guns, commanded by his father. Shortly afterwards he went to the Royal Naval College at Portsmouth, where he won the silver medal for his acquirements in mathematics.

Having passed a distinguished examination at the College, Mr. Raper returned to service afloat, and was some months in the *Nymphen* frigate. In October, 1815, he joined the *Alceste*, of 38 guns; which ship, after conveying Lord Amherst as ambassador to China, was lost on her homeward voyage, by striking on a sunken rock in the Strait of Gaspar, on the 18th of February, 1817. Here he participated in all the hardships experienced on the rocky islet, Pulo Leat, to which the crew escaped; there they were in danger of death from thirst, and constantly threatened by ferocious Malay pirates, whose proas, to the number of sixty, completely blockaded them. After being relieved from this critical situation by vessels despatched from Batavia, Mr. Raper served successively on various stations in the *Tyne* and *Seringapatam*, till, at his father's express wish, he joined the *Adventure*, sloop of war, commanded by Captain W. H. Smyth. The service which this ship was then employed upon in the Mediterranean gave him an opportunity of improving his talents in navigation, surveying, and nautical astronomy; and he was placed in charge of the chronometers, in conjunction with his former college-associate the late unfortunate Captain Graves, who was murdered at Malta in August, 1856. Having been promoted to the rank of Lieutenant on board the *Euryalus*, from which frigate he was shortly afterwards removed into the *Dispatch*, Raper remained in that brig until she was paid off, in 1824. When the late Admiral Beechey, who had been one of the *Adventure's* officers, was commissioned to the *Blossom* in January, 1825, for his interesting voyage to Behring Strait *via* Cape Horn, he placed the filling up of three vacancies in the hands of his former commander, Captain (now Admiral) Smyth. One of these being the post of First Lieutenant, the Captain pressed its acceptance upon Raper, and had nearly prevailed; but an erroneous notion that a slight which the Admiralty had shown to his father might be visited on him, made him at last decline.

* This sketch of the career of Lieut. Raper is contributed by my eminent friend Admiral Smyth.

Having thus virtually abandoned the active line of his profession, he betook himself very assiduously to the cultivation of its scientific departments; and his efforts were crowned with such success that his name must ever be enrolled among the improvers of hydro-geographical knowledge. In 1832 he was selected by the Admiralty to form one of a committee to improve the method of measuring the tonnage of ships; and the Report, which was principally drawn up by him, was equally clear and convincing.

In connexion with this Society, of which he was one of the earliest members, has Lieutenant Raper repeatedly served on our Council. In 1840 he published his 'Practice of Navigation,' a book of sterling merit, for which we awarded him the Gold Medal in the following year. That this prompt appreciation of the work was a just one, was evidenced by its being soon afterwards adopted in the Royal Navy, and by the ships of the East India Company. Moreover the third edition of it was noticed from this chair by Admiral Smyth, in 1850, as well generally for the useful additions engrafted on its pages, as particularly for its admirable and well-organized table of 'Geographical Positions' of all the places on the globe; and which, with infinite skill and labour, he increased from 2,300 to no fewer than 8,800. In this edition he also introduced those significant symbols for the admission of great local information in a limited space, which promise to render chorographic details of readier reference than under any other form; and the whole is so stamped with worth as to prove unequivocally the industry, method, and varied attainments of the author.

This highly useful book was to have been followed by a second volume containing a theoretical discussion of all the data and details contained in the first—in fact, to prove analytically what he had expounded synthetically. As this work advanced it assumed increased importance, from combining astronomy, geodesy, mechanics, geometry, and physics; but, unfortunately, he did not live to complete it. His manuscripts are left, but from their unarranged state and nature, their publication is rendered very unlikely.

Lieutenant Raper became a Fellow of the Royal Astronomical Society in 1829, and not only served upon its Council repeatedly, but for several years filled the important post of Secretary, with credit to himself and advantage to the Society. He maintained his habitual cheerfulness and continued his labours to the last; insomuch that in July, 1858, he communicated to the Astronomical Society his improved method of 'Clearing a Lunar Distance.'

Meantime his malady increased, and he died at Torquay, in January last, in the 60th year of his age. His death has occasioned a blank in pursuits which require a mind of no common order, and his loss will be severely felt by his widow and a numerous circle of friends.

Sir Arthur de Capell BROOKE, who died recently at his seat of Oakley in Northamptonshire, like several other associates who have been recently taken from us, was also one of our earliest members. Though a person of retiring and unostentatious habits, who seemed to have no desire to take that part in public life for which his descent, property, and station befitted him, Sir Arthur had all the spirit of an adventurous traveller. In truth, it was he who had the merit of establishing the Raleigh Club, which has now merged into the Club of the Royal Geographical Society. An original member of the Travellers' Club, which bore in the first instance a geographical character, our deceased associate felt so strongly that many of the newly elected members did not sufficiently represent the spirit of foreign exploration, that in the year 1821 he induced a certain number of his qualified associates to unite with him in setting up a Dinner Club which should bear the name of the illustrious Walter Raleigh. Of this club, which contained the names of most of our leading travellers, including men who had explored Africa, the Indies, America, and the Polar Regions, Sir Arthur Brooke continued to be President for many years, and during all that period, when dinner clubs were more in vogue than at present, I can testify that it was considered a feather in any man's cap to be elected a member of the Raleigh.

Sir Arthur Brooke was also a Fellow of the Royal Society, and was favourably known to the public as the author of 'Travels in Norway,' a work which gives a striking picture of the physical features and natural history of that rugged land of glaciers and deep fiords.

Mr. William WEIR, who was suddenly cut off in the midst of his active and useful career as a man of letters, and who had distinguished himself by numerous contributions to the periodical and daily press (latterly as Editor of the 'Daily News'), was a sound geographer.

Reared in the Scottish and German universities, and entering into the profession of the law, his strong and cultivated mind could unquestionably have secured for him a high position in public life, had not an incurable deafness compelled him to abandon

the long robe and take to journalism. At one time this Society was so fortunate as to secure his services as the Editor of its volume ; and having then formed his acquaintance, it gives me pleasure to state that I esteemed him as a sensible, right-minded, and truly learned geographer, as well as a man of the kindest disposition.

It has been well said of Mr. William Weir that he was master of the library of Europe ; for he was in himself an encyclopaedia of law, history, literature, biography, and bibliography, as well as of geography. Rightly did some of his surviving friends and admirers endeavour to raise a sum of money as a testimonial to his varied merits, in order to assuage the lot and enlarge the narrow means of those with whom Mr. Weir hoped to spend the tranquil evening of his days. Although the appeal has not yet been adequately responded to, I sincerely trust that those who admired his lofty integrity will still unite to effect the praiseworthy object of thus honouring the memory of William Weir.

The Earl of HADDINGTON, who died at the age of 78, was educated at Christ Church, Oxford, and, as Lord Binning, represented Rochester in the House of Commons from 1818 to 1826. On the formation of the late Sir Robert Peel's first administration, in December, 1834, he was appointed Lord-Lieutenant of Ireland, a post which he held up to the dissolution of the Government. When Sir Robert Peel again took office, in the autumn of 1841, his Lordship was selected for the post of First Lord of the Admiralty, with a seat in the Cabinet; and seeing the usefulness of our Society in the advancement of nautical science, he joined us in that year. He held the chief naval office up to January, 1846, when he was made Lord Privy Seal, and retained that position until the final dissolution of the Peel Government.

His Lordship, although opposed to the Reform Bill and other measures of the Governments of Earl Grey and Viscount Melbourne, adopted the enlarged views of Sir Robert Peel on the repeal of the corn laws and the commercial reforms which followed. After the retirement of Sir Robert from office, the late Earl rarely interfered in politics. In 1814 his Lordship was made a Privy Councillor, and in 1853 he was installed a Knight of the Order of the Thistle. He was Hereditary Keeper of Holyrood Palace, one of the Elder Brethren of the Trinity House, a Trustee of the British and Hunterian Museums, and Deputy-Lieutenant of Haddingtonshire.

LIEUT.-GENERAL SIR C. FELIX SMITH, K.C.B.—This distinguished officer, who died at Worthing in August last, aged 71, served in

1807 at the capture of the Danish islands of Santa Cruz, St. Thomas, and St. John; and in 1809 at the siege of Fort Bourbon and the capture of Martinique, where he was wounded. He was senior engineer in charge of Cadiz and its environs, in the operations connected with the battle of Barrosa in 1811, and commanding engineer at Cadiz prior to, and at the raising of, the siege in the following year. He was subsequently present at the combat of Osma, the battle of Vittoria, the actions of Villa Franca and Tolosa, and at the siege of St. Sebastian, in the earlier part of which he acted as commanding engineer. He was afterwards present at the capitulation of Paris, and remained there for some time with the army of occupation.

Sir Felix became a Lieutenant-General in November, 1851, and Colonel-Commandant of the Royal Engineers in 1856. He received a medal and one clasp for his services at Vittoria and at St. Sebastian. In 1814 he was nominated a Knight of the Order of Charles III. for his skill in the gallant defence of Tarifa in 1811. He was Commander of the British military force in Syria, and was severely wounded at St. Jean d'Acre, for which last services he received in 1841 the thanks of both Houses of Parliament.

Sir Belford Hinton WILSON, who was born in 1804, entered the military service of the republic of Columbia in 1822, and attained the rank of Colonel; served as aide-de-camp to General Bolivar from 1822 to December, 1830; became British Consul-General in Peru, April, 1832; Chargé d'Affaires in Peru and in Bolivia, November, 1837; and was Chargé d'Affaires to Venezuela from November, 1842, to November, 1852. He received the Order of the Bath for his diplomatic services.

Major Henry Seymour MONTAGU, a school-fellow and brother-officer of our respected associate Lieut.-General Sir George Pollock, went to India in 1801, and served in the same regiment as the late Sir William Nott. He was afterwards appointed aide-de-camp to the Earl of Minto, and held several high appointments in India. Having returned to England, he travelled extensively on the continent, and was much attached to geographical pursuits. He was also a warm promoter of various charitable societies.

MAJOR-GENERAL SIR WILLIAM REID, K.C.B.—This highly distinguished officer of Engineers was a man of so observant a mind, and was so possessed of sound sense united with a calm but resolute temperament, that he was by nature destined to succeed in any employment he undertook.

Joining the army of Wellington in 1810, he was present as a subaltern officer of engineers at all the great sieges and battles in the Peninsula, from that date until the close of the war, when he obtained his company. He was afterwards present at the bombardment of Algiers in 1816, and commanded the Engineers under Sir De Lacy Evans in Spain.

In 1832, when employed at Bermuda, and when devising the reconstruction of extensive Government buildings destroyed by a hurricane, he was led to follow out that series of inquiries into the causes of such storms, and collected numerous data to work out their gyratory character, which had been shortly before put forth by Mr. Redfield of New York. These effects resulted in 'Reid's Laws of Storms,' which work, published in 1838, has passed through several editions, and has been translated into various foreign languages, even into Chinese. By the law which he evolved, he taught the mariner that the old method of running before the wind in such storms might lead to destruction, and that true safety was to be sought by veering to the one side or the other, and thus escaping from the whirlwind.

It was infinitely to the credit of my old friend Lord Glenelg, then Colonial Secretary, that in consequence of the talent displayed in that work, his Lordship appointed Colonel Reid to the Government of the Windward Islands; and I mention this circumstance because science is not often so appositely rewarded.

As an administrator, Sir William Reid was never more distinguished than in methodizing and controlling the proceedings of the Great National Exhibition of the Industry of all Nations, with which our Vice Patron the Prince Consort has so eminently identified his name; and His Royal Highness never better demonstrated his right appreciation of true merit than in warmly acknowledging the value of the services of the Chairman of the Executive Committee of that great undertaking, and in procuring for William Reid the honourable distinction of a Knight Commandership of the Order of the Bath, and the Government of Malta.

Possessing a genuine enthusiasm under a calm and tranquil exterior, Sir William not only thoroughly performed his arduous duties at Malta during the Crimean war, but lost no opportunity of improving the estate committed to his charge, by ameliorating its agriculture, replenishing the old library of the knights, and by founding a botanical school for the working classes.

He died in his sixty-sixth year, sincerely regretted by every one who knew him.

Admiral Sir Charles OGLE, Bart., who died in June last, at the age of 83, was the eldest son of Admiral Sir Chaloner Ogle, who, like his deceased son, died the senior Admiral in the British navy. Sir Charles Ogle took deep interest in, and was a munificent contributor to, the different charitable institutions connected with the naval service, and had been for many years President of the Royal Naval Benevolent Society.

Vice-Admiral Percy GRACE, a distinguished officer of the old war time, was the brother of Sir W. Grace, Bart.

He began his naval career in 1801 on board the *Ganges*, 74, and was present at the battle of Copenhagen. He next served on the East and West India and North American stations; and when in the *Greyhound*, distinguished himself at the capture of the *Pallas* French frigate and two armed Indiamen. He was then wrecked, and became a prisoner at Manilla and Batavia. Being in the command of some boats as a Lieutenant, he captured two Malays, after a sharp fight, and was wounded. In the boats of the *Semiramus* frigate, he contributed to the capture of five French vessels, four miles up the Gironde; and about March, 1810, he received the well-merited thanks of his captain for the part he took in the capture of *Le Pluvier* of 16 guns. It was not till June, 1814, after having seen more service on the coast of North America, that he was rewarded with the rank of Commander. In command of the *Cyrene* he displayed much activity on the coast of Africa and in the Mediterranean; and subsequently he became senior officer in the Levant. He was made Post Captain in 1825, and had been an Admiral a few years when he died, to the regret of numerous friends.

CAPTAIN SIR WILLIAM PEEL, R.N.—Of all the naval worthies who have recently been taken from us, no one has been so mourned for by the nation as that chivalrous and noble seaman William Peel, the third son of the late illustrious statesman. It is not for me to attempt to detail his daring exploits in the Black Sea, or when in heading the Naval Brigade in the late Indian warfare he showed what efficient services could be rendered to the army by his hearty and devoted co-operation.

Serving at St. Jean d'Acre as a midshipman, under Admiral Sir R. Stopford, he obtained the rank of Commander in 1846. After distinguishing himself in the Black Sea and Crimea, where he was

wounded, he was employed in the Chinese seas, when, providentially for our Indian empire, he was sent directly with troops by Lord Elgin to Bengal, to aid in quelling the mutiny. Ascending the Hoogly in the *Shannon*, he proceeded to Allahabad and Cawnpore, and we all know how, by his energy, heavy guns were brought into action, and how materially he contributed to the capture of Lucknow, in which operation he was again wounded. Alas! that after these triumphs he should have been cut off by smallpox at the early age of thirty-three!

In truth, every Englishman who looks mainly to our navy for the preservation of our independence as a nation must deplore the loss of such a hero at a critical period in our history, when the defences of the country so seriously occupy the thoughts of all persons, and particularly of all old soldiers and sailors.*

Apart from his glorious but too short naval career, Captain Sir William Peel had the true spirit and capacity of an explorer, and had indeed already proved that he was a real working Fellow of the Royal Geographical Society. His journey across Nubia † under the severest privations convinced us that into whatever part of the world he roamed, whether as a traveller in search of the truths of Nature or in following the path of duty, he was unquestionably one of those who, had he been spared, would have materially enriched geographical science.

In short, whether we appeal to his brave messmates of both services by whom he was sincerely beloved, to the explorers of distant lands among whom he had enrolled himself, or to the public at large, most certain is it that few men have ever fallen in the country's cause who have been more affectionately remembered than William Peel.

Commander George Frederick MECHAM, R.N., one of our Arctic heroes, has been taken from us at the early age of thirty.

He was promoted for his valuable Arctic services in the expeditions of Captains Austin and Belcher, 1850-4, during which he made the longest overland search on record. On his return he was appointed to the command of the *Vixen*, and, whilst in command of that vessel, died suddenly at Honolulu of bronchitis. Shortly before his decease he sent to this Society a paper on the different spe-

* See the able work on our National Defences, by that distinguished strategist of the days of the Peninsula and Waterloo, my valued friend Lieut.-General Shaw Kennedy, C.B. (Murray, 1859.)

† 'Ride through the Nubian Desert.' (Longman.)

cimens of sulphur, boracic acid, &c., collected by him at the volcano of Kilanea.

Commander PAULSON, R.N., closes the list of naval officers who have been taken from us. He served in the Burmese war as a Lieutenant, and attained the rank of Commander in 1842, when the *Royal George* yacht was placed under his orders.

Sir James RAMSAY, Bart., of Banff House, Perthshire, and the eighth Baronet of the name, who died in January last, was a lover of scientific pursuits and a respected country gentleman.

Sir Edward North BUXTON, Bart., who died at the early age of forty-five, was son of the justly respected Sir Thomas Fowell Buxton, whose name is for ever associated with the emancipation of the African negro. He was born in 1812, succeeded to the Baronetcy on his father's death in 1845, and in 1847 was elected as representative for South Essex. In 1855 he was obliged to go abroad with his family on account of his health, and he spent the winters of 1856 and 1857 chiefly at Nice. His visit to Piedmont will long be particularly remembered, on account of the beneficent influence which he exercised in calming down that unseemly strife which had divided the Italian from the Vaudois Protestants. In this good work he persevered, and he deemed it so important that the true character of the Italians should be clearly known, that he took a journey from Cromer last September purposely to state his views to the religious conference assembled at Berlin.

REV. DR. JENKYN.—The late Rev. Dr. Jenkyn displayed in early age a thirst for knowledge, which distinguished him through life. Placed under the able tuition of the late Rev. Dr. Pye Smith, he formed a friendship with him which lasted till death; and from that excellent man he doubtless derived that love of natural science which was so marked a feature of his intellectual character.

His ardent attachment to geological science is well known, and his 'Elementary Lectures on Geology' in a popular educational periodical were characterised by a leading member of the Geological Society as being the best work of the kind for the masses that he had seen. In 1853 he was elected Fellow of the Royal Geographical Society. He died at Rochester, deeply and deservedly regretted by those who knew him, in the sixty-fourth year of his age.

He published works on religious subjects to which it is not my province to advert, and was for some years President of Coward College, London.

Mr. Richard TAYLOR, the well-known printer and accomplished naturalist and scholar, was born at Norwich in 1781. In the year 1807 he became a Fellow of the Linnean Society, and in 1810 was elected its under-secretary, an office which he retained for nearly half a century, and in which he earned for himself the cordial esteem and good-will of every member of the Society. In his diary, under date of the anniversary of 1849, he notes that he had "served with the naturalists M'Leay, Bicheno, Boott, and Bennett, under the successive Presidencies of the founder, Sir J. E. Smith, of the late Earl of Derby, the Duke of Somerset, and Dr. Stanley Bishop of Norwich." To the names of these Presidents he might subsequently have added those of Robert Brown and of Thomas Bell, the actual President of the Linnean Society, by both of whom he was highly esteemed for his strict sense of honour, his amiable disposition, and his entire devotion to the interests of the Linnean Society.

Among the numerous other learned bodies of which he was a member, the Society of Antiquaries, the Astronomical Society, and the Philological were those bodies in which he took the deepest interest. He also attached himself from its commencement to the British Association for the Advancement of Science, many of the meetings of which he regularly attended, and at which he was always cordially welcomed by numerous friends, including myself.

In 1822 he joined Dr. Tilloch as editor of the 'Philosophical Magazine,' with which Dr. Thomson's 'Annals of Philosophy' were subsequently incorporated. In 1838 he established the 'Annals of Natural History,' and united with it, in 1841, London and Charlesworth's 'Magazine of Natural History.' He subsequently (at the suggestion and with the assistance of some of the most eminent members of the British Association) issued several volumes of a work intended especially to contain foreign papers of a high order of merit, translated into English, under the title of 'Taylor's Scientific Memoirs.' But his own principal literary labours were in the field of Philological research. In 1829 he prepared a new edition of Horne Tooke's 'Diversions of Purley,' which he enriched with many valuable notes, and which he re-edited in 1840. In the same year (1840) Warton's 'History of English Poetry' having been placed in his hands by Mr. Tegg the publisher, he contributed largely, in conjunction with his friends Sir F. Madden, Benjamin Thorpe, J. M. Kemble, and others, to

improve the valuable edition published in 1824 by the late Mr. Richard Price.

Early in the summer of 1852 his health gave way, and he found it necessary to withdraw from the excitement of active life. Increasing years brought increasing feebleness; and the severe weather of November last brought on an attack of bronchitis, of which he died.

Mr. Abel SMITH was one of those men of calm, retired character who, in the very centre of the busiest capital in the world, and engaged in the most important transactions, pursued his tranquil way in performing good works.

Born in 1788, he early in life became possessed of ample fortune, bequeathed to him by an uncle; and after the death of his father, he became chief of the banking-house in Lombard Street, known as that of Smith, Payne, and Smith. He took great interest in all the scientific discoveries and inventions of late years, and carried out his views of the importance of education by promoting the improvement of the poor. Opulence never affected the simplicity of his character and habits. Careful and discriminating in all his transactions, and weighing with much consideration the claims made upon him, he was princely in his charities and also in his acts of pecuniary generosity. Appeals were seldom made to him in vain; both his sense of duty and the gratification of a most benevolent disposition leading him to give bountifully in cases of real distress and difficulty.

Mr. Abel Smith entered Parliament in 1809 and continued until 1846, during the last fourteen years of which he was returned for the county of Herts.

Richard Holmes LAURIE, the well-known publisher of nautical works, was born in 1777. From the year 1818 he relinquished all other collateral branches of publication, and contented himself with maintaining the character of his nautical works for excellence and minute accuracy. These works, unattractive, and not much known to the general public, have high claims to consideration from their wide-spread circulation and great general utility among geographers. Mr. Laurie was very highly respected for his strict integrity. He was one of the oldest members of the trade, and almost the last connecting link between the old and new systems of publication.*

* In addition to the above the Society has to regret the loss of the following Fellows, viz.:—Alexander Cumming, M.D.; H. Stewart Dykes; Sir Isaac L. (Baron) Goldsmidt, Bart. (whose liberal support of science and letters was widely felt); the Rev. J. W. Martin, LL.B.; James Morison; Aristides Franklin Mornay; and Thomas Lister Parker.

William Kennett LOFTUS, who, though not a Fellow of this Society, had contributed some important papers to its Journal,* comprising Notes of a Journey from Busrah to Bagdad, and on the Determination of the River Eulaeus of the Greek Historians, died in November last, at the age of thirty-seven, on board the *Tyburnia*, on his way home from India. Mr. Loftus was a good scholar, and had passed much of his life in the East. He served four years in Mesopotamia under Colonel Williams (now Sir W. F. Williams of Kars), as naturalist and geologist to the expedition sent out for the settlement of the Persian frontiers. On his term of service expiring, he was sent by the Assyrian Society to investigate the ruins of Babylon and other ancient Biblical cities. The results were published in a book entitled 'Travels and Researches in Chaldea and Susiana,' which reflected much credit on this young geographer and archaeologist. Afterwards appointed as a geological surveyor on the Great Survey of India, he laboured zealously at his work till he was struck down by a sun-stroke. He went to Rangoon to recruit his health, and not succeeding, was ordered home, and died on the voyage.

ADOLPHE SCHLAGINTWEIT.—In closing this obituary, it is my melancholy duty to state that the event which was foreshadowed in the Address of last year has been realized; and that the bold and accomplished explorer, Adolphe Schlagintweit, is no more!

The documents which attest that he was assassinated before the walls of Kashgar (midway between Yarkand and Kokan) were officially transmitted by Lord Stanley, the Secretary for India in Council, and laid before the Society.† It appears that Adolphe Schlagintweit, who took a route farther to the west than his brothers Hermann and Robert, had succeeded in penetrating farther than they did into Central Asia; for he not only reached Yarkand, where he was well received, but was on his route to Kokan, when, in one of those religious forays made by the fanatical Turks or Crescentaders from Kokan against the Chinese, he was killed in August, 1857, by order of a savage Mohammedan chief, named Wulli Khan.

When we know that the deceased had overcome the greatest difficulties of his perilous journey, had traversed the western pro-

* See vols. xxvi, and xxvii.

† These papers have since been printed by his brothers Hermann and Robert for private distribution.

longation of the Kara-Korum chain, and that northernmost ridge of those vast mountains which his brothers consider to be the Kuen Lun of Humboldt, it is deeply to be deplored that the great amount of knowledge he had accumulated should thus have been lost.

Although it is known that the adventurous Conolly did, when at Bokhara, penetrate from that place to Kókan, no European of modern times has succeeded in passing from India over the snowy chains of the Kara-Korum and Kuen Lun, to descend into Turkistan, except the Schlagintweits; and it is most distressing to have to record that he of the three brothers who pushed his adventure the farthest should have been cut off at a time when his note-books and observations must have been of the highest value.

As Englishmen, we have, however, the consolation of reflecting, that our authorities who gave the warmest support to the deceased traveller whilst in life, have never ceased to endeavour to trace the history of his last days, and are even now energetically endeavouring to recover his lost papers.

No individual has taken a more lively interest in these last-mentioned researches than our distinguished associate, Captain Richard Strachey, who, with his brother, one of our medallists, is so well known to us by his explorations in the Himálayan Mountains and Thibet. Seeing what has also been done by Lord W. Hay, Colonel Edwardes, and Mr. Knox, as well as by the Russian Consul at Chúquchak, M. Vardouguine, we may rest assured that every effort will be still made to recover the lost records of the zealous and intrepid Adolphe Schlagintweit.

GEOGRAPHICAL PROGRESS IN THE PAST YEAR.

In proceeding, as on former occasions, to bring before you a review of the progress of geography during the past year, I must claim your indulgence when I say that, from my numerous avocations, I have found it impossible to prepare a more complete retrospect than that which I now offer.

In truth, the field of exploration and discovery is becoming too vast to permit any one man—however zealous and laborious—to accomplish such a task without many omissions; to say nothing of the difficulty of condensing into one Report the merest outline of all the geographical literature of the year.

The account of the progress of the British Admiralty Surveys, which—as usual—is first given, is indeed as perfect as at any former period; for, in continuation of the practice of Admiral Sir F. Beaufort, his revered predecessor, Captain Washington, the hydrographer, has prepared this document with his well-known and acknowledged skill.

Let us, therefore, begin with this National Maritime Survey, after the reading of which I will endeavour to pass in review the most important geographical discoveries in various parts of the globe, as well as to note the progress of publication in various countries.

ADMIRALTY SURVEYS.

The Coast surveys in course of execution under the orders of the Admiralty, both at home and abroad, have made fair progress during the past year. They are conducted by twenty different surveying parties—one half of which are employed on portions of the coasts of the United Kingdom, the remainder in the colonies of Australia, Cape of Good Hope, West Indies, Nova Scotia, Canada, and British Columbia; also in the Mediterranean, in Banca Strait, and on the coasts of China and Japan.

England.—On the east coast of England, the only work of importance has been the re-examination of Hartlepool bay by Captain Bedford and Lieutenant Horner, with a special view to discover if any silting up had taken place since the first detailed survey of the bay was made by Commander Slater in the year 1829, and repeated by Mr. E. K. Calver in 1843. The new plan is drawn on a scale of eight inches to the nautical mile, and is sufficiently minute to have enabled Captain Bedford to furnish the Refuge Harbours Commission (at whose instance the survey was made) with a decided opinion, or rather proof, that no perceptible change had taken place in the depths within the last thirty years. Fortified by this result, the Commissioners have recommended Hartlepool bay as one of the sites for a refuge harbour on the east coast of England.

On the south coast, Commander Cox and Messrs. Usborne and Davis are continuing the survey of Hamoaze, and have completed St. John Lake and St. Germans River, including 33 miles of river bank line and 13 square miles of soundings. In the Channel Islands, Commander Sidney has re-examined the harbour of Braye, in Alderney, and the Great Bank off Guernsey. A valuable addi-

tion to the navigation of the Channel has been made in the publication by the Admiralty of the 2nd volume of the 'Channel Pilot,' containing Sailing Directions for the north coast of France, from Dunkirk on the east to Ushant on the west, comprising the Channel Islands. The work has been carefully compiled by Mr. J. W. King, of the Hydrographic Office, from the 'Pilote Français,' the labours of Rear-Admiral Martin White, Mr. C. Burney, R.N., and others.

In Cornwall, Captain Williams and Mr. Wells have surveyed eight miles of open coast from the Rame Head westward to St. Germans beacon, including Whitesand bay and Port Wrinkle, sounding over an area of 230 square miles between the Beacon and Falmouth, with plans of the small harbours of Boscastle and Port Isaac, on the north coast of the county; they have also executed a very detailed plan, on the scale of 100 feet to an inch, of the Eddystone rocks off Plymouth, showing the exact outline of the granite mass that forms the base for that wonderful structure, the Eddystone Lighthouse, erected by Smeaton in 1760, and which has hitherto withstood the force of the Atlantic waves. A similar structure, in a still more exposed situation, has just been completed, under the direction of the Trinity Board, by their skilful engineer, Mr. James Walker, ably seconded by Mr. Douglas, on the Bishop rock, six miles south-west of the Scilly Isles. These noble light-towers, like the two similar buildings on the Bell rock on the east coast of Scotland, and of Skerryvore on the west, are national works in the cause of humanity, and for the safety of our shipping, of which the country may be justly proud; and they will transmit to distant posterity the names of the eminent engineers Smeaton, Walker, and the Stevensons, father and sons.

In the Bristol Channel and its approaches, Commander Alldridge and Mr. Hall, in the *Asp*, have made a survey of Swansea Bay and its immediate neighbourhood, which has revealed some patches of hard ground—probably oyster beds, not before known. This plan, which shows sixteen miles of coast line and 20,000 casts of the lead, is drawn on the scale of nine inches to a statute mile, and proved very useful to the Refuge Harbours Commission in its examination of Swansea Bay and the Mumbles, which had been mentioned as a site for a refuge harbour; and, although the Commission has not recommended it as such, there seems a fair probability that the shelter afforded by the Mumbles Head, the abundance of stone for construction, and the increasing want of some shelter

for the rich copper ore ships, which are frequently obliged to ride out southwesterly gales in this exposed roadstead, will lead the enterprising merchants of Swansea to consider whether, notwithstanding their recent spirited outlay on docks, they cannot construct a sufficient breakwater out of their own resources. The requirements of the Harbours Commission have also led to the publication of a chart of Lundy Isle, on the scale of 4½ inches to a mile, and of the two sheets of the upper portion of the Bristol Channel, on the scale of two inches to a mile, which are rapidly advancing to completion.

Scotland.—In Argyleshire, Commanders Bedford, F.R.G.S., and Creyke, and Mr. Bourchier, R.N., have been employed on the coasts of Mull, and an useful Chart of the Sound of Iona from their survey has been published on the scale of 3 inches to a mile. In this immediate neighbourhood the geographical features of the country have suffered some change from the breaking down of the reservoirs of the Crinan Canal, caused by the heavy rains. In restoring this navigation, we may express a hope that the dimensions of the locks of this canal will be placed more on a par with those of the Caledonian Canal, so that the greater part of the vessels that navigate the one should also be enabled to pass through the other; seven out of the fifteen locks might also be dispensed with, and an uninterrupted level be carried from the top of the rise near Loch Gilp Head on Loch Fyne, to the descent into Loch Crinan on the north. This event, too, has again opened the question of the Argyle Canal, to connect by a short link of about one mile East and West Tarbert lochs.

In Skye, Commander Wood and Mr. Forbes have surveyed twelve miles of the open coast on the south-west face of the island from Loch Bhreatal northwards to Loch Bracadale, including the smaller inlets known by the names of Lochs Eynort and Harport, and the district of Minginish, with its magnificent mural cliffs, rising 800 feet almost precipitously from the sea. On the coast of Inverness-shire, Mr. Jeffery has completed the shore line and outlying rocks and soundings as far south as Ru Arisaig.

In the Hebrides, Captain Otter, in H.M.S. *Porcupine*, with her tender the *Seagull*, Lieutenant Chimmo, aided by his staff of Lieutenants Dent and Hawes, and Messrs. Stanley and Cramer,*

* It is with extreme regret that I mention that the preparing and colouring the sheets containing the survey of Loch Rong was Mr. Cramer's last work: over-anxiety on account of domestic illness, with the rigorous climate of the Hebrides, brought on an attack of disease from which he could not rally, and at the early age of thirty-five an accomplished artist and an honest, hard-working man was lost to his country.

has surveyed Loch Roag on the west side of Lewis, and made a beginning on Loch Maddy on the east shore of North Uist; he has also examined the dangerous rocks the Haskier, seven miles to the westward of that island, an outlying group, on which it is proposed to place a light for the safer navigation of those seas, and to lead up to the northern entrance of the Sound of Harris. In connection with the Skye survey, the *Seagull* was employed in sounding over an area of several square miles between the south of the island and the detached islets of Canora, Rum, and Eig. In the island of Harris, Lieutenant Thomas has surveyed West Loch Tarbert, and connected it with the eastern loch, which he completed last season. All these plans are projected on the scale of six inches to a mile. Some of the original drawings have been exhibited at our evening meetings, and have justly elicited much admiration.*

Some of the results of these and former surveys of the west coast of Scotland have been published by the Admiralty since our last Anniversary; among others I may mention charts of Lochs Torridon and Shieldag, and of Lochs Carron and Kishorn on the west coast of Ross-shire, both engraved on the scale of three inches to a mile; Loch Tuadh and the isles on four inches; and the sound of Harris on a scale of rather less than two inches to a mile, but sufficiently large for all the requirements of the mariner. Besides these, there is a general chart of the coast from the Mull of Kintyre to Cape Wrath, on the scale of a quarter of an inch to a mile, which for the first time represents with tolerable accuracy the western shore of Scotland with its numerous islands. The intricacy of this coast has hardly its parallel on the globe, unless it be some portions of the west coast of Norway, Tierra del Fuego, and the west coast of Patagonia. It has occupied more than twenty years to survey; and, with the off-shore soundings, will require five years more to complete it. Its cost when finished will not have been less than 250,000*l.*

Ireland.—On the east coast of Ireland Messrs. Hoskyn, Aird, and Yule have surveyed Dundalk bay and harbour, and broken ground at the Strangford narrows. In the course of their work they have sounded over an area of 70 miles; but the chief service rendered by this party of surveyors is the boring of Carlingford Bar, preparatory

* Lieutenants Thomas and Chimmo have made a series of meteorological observations during the past season in the Hebrides, which are very creditable to these officers, and will, no doubt, prove valuable to meteorologists.

to rendering that fine lough a harbour of refuge. It is gratifying to know that the result of their examination proves that there is no obstacle that may not be easily overcome, and that there is a fair probability that within three years we shall see a refuge harbour in this portion of the Irish Sea, where it is so much needed.

In Donegal, on the north coast, Captain Bedford and Lieut. Horner have completed that portion of the shore which was required to fill up the gap in our charts; all that now remains is to carry the soundings off shore to a depth of 100 fathoms. In addition to his usual labours, Captain Bedford, at the request of the Refuge Harbours Commission, prepared a report on the want of lights and buoys on the north-west coast of Ireland, from Galway round to Londonderry, a valuable document, being the result of his 20 years' experience, which is printed in the Appendix to the Report of that Commission.

In Kerry, on the south-west coast, Commander Edye, with Messrs. Macdougall and W. B. Calver, have been employed on the Blasket Isles round from Dingle Bay to the Skerries, in the course of which they have sounded over an area of several square miles. This completes the survey of the shores of Ireland: it only remains to carry the soundings off shore to the depth of 100 fathoms.

In the course of the past year the charts published of the coast of Ireland are Dunmanus Bay in Cork on the scale of 3 inches, Longhs Swilly and Foyle and the river and harbour of Londonderry on the scale of 1½ inches to a mile, the latter showing the new quays, and the admirable lighting and beaconing of the river and lough, which have been carried out by the enterprise of the Harbour Commissioners of Derry, seconded by the skill of their engineers the Messrs. D. and T. Stevenson of Edinburgh.

Mediterranean.—The channel between Malta and Gozo has been re-examined by Captain Spratt, R.N.G.S., and Lieut. Wilkinson, in H.M.S. *Medina*, and a second Report has been written by the former, showing how the Nile continues to bring down its deposits, and how the advance of the delta is checked by the littoral drift from the west; a subject on which I shall dwell in the sequel. Captain Spratt has also presented to the Society a dissertation on the site of Pelusium, which he does not believe to have been at the ruins of Tineh as has been generally supposed, but at some place rather farther inland.

Lieut. Wilkinson, under the direction of Captain Spratt, has made a general chart, showing at one view his surveys of the delta of the

Danube in the Black Sea, to which I referred last year, forming a beautiful drawing, which has been exhibited at one of our evening meetings, and justly elicited warm commendation.

On the coast of Syria Commander Mansell, with his assistants Lieut. Brooker and Mr. Frederick Skead, have surveyed the gulf of Iskanderún, and made plans of the roadsteads of Ayas on the north and Alexandretta on the south. They will now proceed systematically to the southward along the coast by Beirút, Akkah, and Yaffa, and so join their former survey of the coast of Egypt at El Arish.

South Africa.—In the Cape Colony Mr. Francis Skead has completed the survey of Table Bay, which has been published by the Admiralty. He also accompanied Dr. Livingstone to the mouth of the Zambesi, and has made a sketch survey of the delta of that river, as far up as Expedition Island. It is gratifying to be enabled to report that, thanks to the energy of Rear-Admiral the Hon. Sir Fred. W. Grey, and the ready aid of Mr. Maclear, Astronomer at the Cape, a transit clock and a time signal ball have been erected in Simons Bay, and that henceforward vessels will be able to rate their chronometers in Simons as well as Table Bay, in each of which the time signal ball drops at the instant of one o'clock Cape mean time, to which I shall have occasion to revert a little farther on.

Red Sea.—Captain Pullen, in H.M.S. *Cyclops*, has completed a line of soundings in the Red Sea, to which I referred last year, and it proves that the greatest depth does not exceed 1050 fathoms: he has also carried a line of soundings from Aden to Kurráchi, in which the general depth at 12 miles off shore is about 500 fathoms, and the deepest 2000 fathoms in crossing the entrance to the Persian Gulf. Not improbably at the moment I am speaking, the submarine telegraph cable has been laid down that will unite England via Constantinople with Aden.

In Ceylon a new survey of the harbour of Point de Galle, by Mr. J. Power Royston, has been just published by the Admiralty on the scale of 15 inches to a mile; it is, we believe, preparatory to the erection of a breakwater in that much frequented but exposed bay. Mr. Stanton, who has succeeded Mr. Richards in command of the *Saracen*, with his assistant Mr. Reed, is employed in the survey of Banca Strait and its immediate neighbourhood which forms the highway to China, and is still but imperfectly known.

China.—Commander Ward, who has succeeded the late lamented

Captain Bate in command of the *Action*, with her tender the *Dove*, Lieut. Bullock, and his staff of surveyors, Messrs. Kerr and Blackney, has greatly improved the chart of the Chu Kiang, or Canton river, and Lieut. Bullock has recently explored the western river for about 150 miles. In the Yang-tse-keang the surveyors accompanied Lord Elgin in his exploratory voyage by Nankin to Han-Kow, and availed themselves of the opportunity to make a good eye sketch of the river for 150 miles as far as the city of Han-Kow, an account of which the Society has received from Captain Sherard Osborn, and on which I shall dilate in the sequel. Captain Ward and his staff have also re-surveyed the river from Wusung to Shanghai, which will shortly be published. In the Gulf of Pechili the Pei-ho has been ascended as far as Tien-sin, and a survey, made by Monsieur E. Ploix, ingénieur-hydrographe of the French navy, has been published by the Admiralty in two sheets, on the scale of about $2\frac{1}{4}$ inches to a mile.

Japan.—Some additions to the United States' Survey of Yedo bay have been made by Captain Sherard Osborn and Commander Ward, and plans of this bay, of Simoda and of Hakodadi, have been published by the Admiralty.

Australia.—Captain Denham, with Lieutenant Hutchison and the officers of H.M.S. *Herald*, have made a partial survey of Shark Bay on the west coast; they have also sounded the approaches to Port Jackson, carried a track through the Coral Sea, correcting the sites of the Cato and other banks, and discovered a dangerous rock at the entrance to Moreton Bay. The plan of Port Jackson, completed last year, has been published, on the scale of $3\frac{1}{2}$ inches to a mile, also the 2nd volume of the Australian Directory, compiled by Commander C. B. Yule, comprising the east coast and Torres Strait, a valuable boon to the mariner. Captain Sir Edward Belcher has re-examined all the longitudes in the Eastern Archipelago, from Madras eastward, and has endeavoured to reconcile the discrepancies which exist, not, however, such as to affect navigation, but far too great for the present state of hydrography in other parts of the globe.

Indian Survey.—The transfer of the government of India from the East India Company to the Crown, and the opening up of a trade to China and Japan, seems to be an occasion calling for a more extended notice than usual of the state of the surveys in the East, which have been made by the officers of the Indian Navy. Whether these surveys will remain under the present direction, or be placed more immediately under the Crown, is unknown to me; but I am

satisfied that I shall render good service by placing on record the present state of the coast survey in the East Indies and China; at the same time expressing our thankfulness as geographers for what the East India Company has already done. It is proposed to extend this brief notice from Suez in the West throughout India, China, and the Asiatic Archipelago, to New Guinea and New Zealand in the East.

The Red Sea, Gulf of Aden, Socotra, and the south-east coast of Arabia, have been sufficiently surveyed for the purposes of navigation by the officers of the Indian Navy, as also the coasts of Beluchistán, Scinde, and Kattiwar, as far south as Cambay. The Gulf of Persia, however, requires some re-examination, which, it is understood, is in progress.

From Cambay southward, along the entire coast of Malabar to Cape Comorin, and thence northward by Madras to Calcutta, the whole of the peninsula of India has been triangulated. The nautical survey of the west coast, and of the east coast between Madras and Santipilly, have also been completed. From the Gulf of Manaar northward to Madras, and from Santipilly to Point Palmyra, is in course of progress by the officers of the Indian Navy. The Sunderbunds, or mouths of the Ganges, up to Calcutta and to Chittagong, have been completely surveyed.

In Ceylon the west coast is also surveyed, but the south and east coasts only very partially, and require early attention, especially in the neighbourhood of the dangerous rocks—the Basses—off the south-east side of the island. The plans of Trincomalee and Point de Gallo are passable; that of Colombo is still wanting. The Maldivas, Laccadivas, and Chagos Archipelago, have been carefully surveyed, and published on a large scale by the East India Company. The coast of Chittagong and Aracan, southward to Cape Negrais, has been partially surveyed, but requires further examination. The river up to Aracan, the Negrais up to Persaim, with its outlying dangers to Preparis, and the Rangoon River, have been sufficiently surveyed. The coasts of Martaban and Tenasserim, as far as St. Matthew Island, including the Mergui Archipelago, have been partially surveyed, but require more examination. From Isle St. Matthew southwards to within ten miles of Pulo Penang, the Malacca coast is all but unknown, though a survey is in progress. The same with the Andaman and Nicobar groups, of which we hardly know anything. Keeling Island has been completely surveyed. The eastern shore of the Strait of Malacca as far as Singa-

pore, and that harbour, have been well surveyed, the latter by Mr. J. Richards, R.N. The western shore of the strait has been very loosely examined. The straits of Durian and Rhio have been partially surveyed, but are very incomplete. The same with the straits of Banca, Gaspar, Macclesfield, and Stolze, the Carimata channel, the west coast of Sumatra, and the islands of Banca and Billiton. The strait of Sunda is fairly known, but not completely surveyed. The island of Java, with the outlying islets and the whole of the Java Sea, have been partially examined by the Dutch, but are still very far from being complete. The same with the islands to the eastward; as Baly, Lombok, Sumbawa, Sumba, Flores, and Timor.

The east, south, and west coasts of Borneo, with the exception of a few spots, as Pantai and Bulungan rivers, Cape Kani-úngan, and Sambar Point, are quite unknown. The north-west coast, from Tanjong Api by Sarawak and Labúan to Balambangan, is sufficiently surveyed. Of the Natunas north group little is known; the south group has been surveyed, and connected with the coast of Borneo. Of the Anambas and Tambelan groups, and of the isles just to the eastward of Singapore strait, we are quite ignorant; with the islands and dangers south-east of Singapore, as Bintang, Battam, Linga, Sinkep, &c., we are better acquainted, although our knowledge of them is still very defective. The east coast of the Malay peninsula from Singapore northwards has been passably surveyed. The Gulf of Siam has been better surveyed by Mr. John Richards, R.N., but some detached portions on the west coast still require examination, and new soundings are wanted all over the gulf.

On the south coast of Cambodia, from Pulo Obi to Cape Padaran, we know nothing. From Cape Padaran northwards, along the coast of Cochin China, has been partially explored, but requires more examination. Turon Bay is surveyed and published. The Gulf of Tong-kin is utterly unknown. The south-east coast of the island of Hainan has been partially explored, but not sufficiently. The rest of the island is unknown.

Pulo Condore, Pulo Sapata, with all the dangerous rocks and shoals in the southern part of the China Sea, across to the coasts of Borneo and Palawan, require examination more urgently than any portion of these seas. Farther north the group of the Paracels and the Macclesfield Bank have been explored, but require more careful examination. The island of Palawan has been completely surveyed, and the charts published. A map of Luzon exists, but

no coast-survey, with the exception of the port of Manila, which is complete.

In China Proper the coast from Hainan Island to Macao has been partially surveyed. From Macao to Canton the river is fairly surveyed, but the group of islets to the south-west of Hong-kong, fronting the entrance of the Chu Kiang, requires further examination. From Hong-kong the east coast of China, as far as the entrance of the Yang-tse-keang, has been sufficiently surveyed for the general purposes of navigation, but as it is not a work in detail, vessels must use caution in approaching the different anchorages.

The Pescadores group and the Chusan isles are also surveyed, but of Tai-wan or Formosa the survey is very partial and detached. The Bashí and Balingtang channels, between Formosa and Luzon, have been explored, but are not at all sufficiently known, and especially the meridian distance is wanted between the Babuyan and the Bashí groups.

The Yang-tse-keang has been explored up to Nan-king, but is far from being properly surveyed; and, indeed, the shifting nature of some of the banks renders it very difficult to make a correct chart of it. From Nan-king upwards to Han-Kow is only known from the track of the expedition in November, 1858.

From the Yang-tse-keang northwards by the Hwang-ho, or Yellow River, as far as the Shantung promontory, being the eastern extreme of that province, the coast has not even been explored, if ever seen, by any European navigator. The Gulf of Pechili is a little better known, especially about the mouth of the Pei-ho. That river is also laid down as far up as Tien-sin; thence to Pekin is only known from the embassies of Macartney and Amherst. The Gulf of Leao-tong is almost unknown. So also with the western coast of Korea, except a few detached capes, the position of which has been fairly determined.

The island of Quelpaert and Port Hamilton have been surveyed. The east coast of Korea has been explored by the French and Russians, as also the coast of Manchuria, as far northwards as the mouth of the Amúr. In this extent Victoria Bay, Port Michael-Seymour, Barracouta Harbour, and Castries Bay, are the only spots passably surveyed.

The Gulf of Tartary also has only been explored. Pérouse Strait, between the south end of Saghalien and Yezo, has not been examined. Of Yezo Island in Japan nothing accurate is known, except the south-west extreme, which forms the northern limit of

the Strait of Tsugar. This latter strait, including the north side of Niphon, has been surveyed. Of the rest of Niphon, with Kin-sin and Sikok, we know nothing, except the position of a few points at its western extreme. There are, however, fair surveys of the bays of Naga-saki, Simoda, and Yedo. Of the islets of Fatchin and Tsu-sima in the Strait of Korea, and of Argonaut and Dugelet islets, we know nothing accurate.

The Kuril Islands, Kamchatka, and the Sea of Okhotsk, have been explored by the French and Russians; the harbour of Petropavlovski has been completely surveyed by the English. Proceeding southward from Japan, the Linschoten Islands are very imperfectly known. The Loo-choo group has been better explored, but still is very incomplete. The Meiaco-sima group has been surveyed.

The Philippine Islands, including Luzon, Mindoro, and Mindanao, have been explored by the Spaniards, but are not surveyed; it is understood that a survey, which is much wanted, is in progress. The same may be said of the Celebes Sea, and of the east coast of Borneo, and west coast of Celebes Island, forming the Strait of Macassar, which is also unsurveyed. Of the Island of Celebes little is known except the western part of the Gulf of Boni, which has been surveyed by the Dutch, and Macassar roadstead by the English. Of the Flores Sea, Banda Sea, Arafura Sea, and the group of islands forming the eastern passages to China, although greatly frequented by shipping, no survey exists.

Of the north-western side of Papua or New Guinea nothing accurate is known. On the north side there is a track-survey, and a few points are fixed, otherwise it is unexplored. The same may be said of the group of the Solomon Islands. The south coast of New Guinea, from the Louisiade Islands westward to Torres Strait, has been surveyed by the English; so also has been Torres Strait.

In Australia, the eastern coast from Torres Strait southward to Halifax Bay, in lat. $19\frac{1}{2}^{\circ}$ South, has been well surveyed; the remainder to Bass Strait has been only partially examined, but some of the harbours, as Port Bowen, Port Curtis, Sandy Island Sound, Moreton Bay, Port Macquarie, Newcastle, Port Jackson, and Two-fold Bay, have been completely surveyed. The Coral Sea to the eastward of Australia, a very frequented track between Sydney and China, has been partially explored, but urgently requires a more complete examination.

Bass Strait has been partly, but not sufficiently, surveyed. The east, south, and west coasts of Tasmania have never been sur-

veyed, nor even the harbour of Hobarton. From Bass Strait westward to the Gulf of St. Vincent has only been explored. St. Vincent and Spencer Gulfs were partially surveyed by Flinders. From Spencer Gulf to Cape Leeuwin, the coast of the great Australian bight, there is only a track-exploration. King George Sound has been partially surveyed.

From Cape Leeuwin to Swan River is only explored. Swan River has been surveyed; thence to Shark Bay, and round the north-west coast to Port Essington, has been sufficiently surveyed for the purposes of navigation, yet hardly, perhaps, enough to please geographers. The islets and shoals lying between Timor and the north-west coast of Australia require to be examined. Port Essington is completely surveyed. Thence to Cape York, including the Gulf of Carpentaria, the coast has been explored, and portions of it partially surveyed, but all of it requires further examination. It will thus be seen that there is ample employment in these eastern seas not only for three surveying vessels, but for double that number if we wish that hydrography should keep pace with the rapid advance of civilization and population.

America.—Crossing the Pacific Ocean to the north-western shores of America, we learn that Captain George H. Richards, with his staff of zealous assistants, Messrs. Bull, Pinder, Mayne, and Bedwell, has completed an admirable survey of Rosario and Haro Straits, and of the numerous islets that lie between the mainland and Vancouver Island, an extent of about 800 miles of coast line, sounding over an area of about 700 square miles—the largest amount of hydrographic work, we believe, ever accomplished in one season by a party of five surveyors. The general chart of these straits engraved on a scale of $\frac{1}{4}$ an inch to a mile is on the eve of publication at the Admiralty. A sketch survey of the Frazer River, in British Columbia, showing the several gold reefs, by Lieut. Mayne, R.N., and Mr. Begbie, Colonial Judge, on the scale of 1 inch to a mile, has already appeared.

Nova Scotia.—On the east side of the North American continent, Commander Orlebar, with his assistants Commander Hancock and Messrs. Desbrisay, Clifton, and Carey, have surveyed 46 miles of the open coast of Cape Breton Island, from Cape Hinchinbroke to Port Nova, including Louisburg Harbour. Some plans also have been published of harbours on the coast of Nova Scotia, as Ship, Guysboro', and Beaver harbours, each on the scale of about 4 inches to a mile. In Newfoundland advantage was taken of the laying

down the Atlantic submarine cable, to make a plan of Bull Arm, Trinity Bay, by Captain Otter and the officers of the *Porcupine*. In the Bay of Fundy Captain Shortland, with his staff, Messrs. Scott, Pike, Scarnell, and Mourilyan, have surveyed the coast of New Brunswick from St. Martin Head easterly to Wolf River, part of Chignecto Bay, and the Bay of Mines, sounding over an area of 400 square miles.

In the West Indies Mr. Parsons, with his assistants Messrs. Dillon and W. B. Calver, are engaged on the island of Grenada. The 2nd volume of a new edition of the 'West India Pilot,' compiled by Captain E. Barnett, has been published at the Admiralty, and is a great boon to the mariner. After bearing his part in the successful laying down of the Atlantic submarine cable, Commander Dayman on his passage home carried a line of soundings from the Azores to England, showing a depth of 2500 fathoms to within 60 miles of the edge of the 100 fathoms shelf which extends from the Land's End, thus indicating that a more sudden dip in the bed of the ocean exists here than was found to the westward of Valentia, in Ireland.

Variation Chart.—I had occasion to mention last year that a Variation Chart of the world, showing at a glance the curves of equal magnetic variation, was in preparation at the Admiralty by Mr. Fred. T. Evans, R.N., chief of the Compass Department. This chart has since been published; and judging from the testimony to its value borne from all quarters, it has proved even a more accurate and useful document than was anticipated. The whole of the curves are reduced to the epoch of 1858; the chart gives also the annual change of variation which is constantly in progress, and this in places exceeds seven minutes yearly. This may appear a small amount, but when we consider that in the greater part of the charts by which our merchant ships are navigated, the variation has not been corrected for thirty, forty, and even fifty years, the practical sailor will at once see a fearful source of error that may, unsuspected, exist. The error of a quarter of a point of the compass in a run of 500 miles would amount to 25 miles, and this, in navigating a long narrow sea or strait, as the Adriatic or Red Sea, might readily lead into dangers, and this error has doubtless been one of the many causes of shipwreck. By this chart the means of correcting the variation in all charts are now within the reach of every one for a few shillings, and we trust it will be largely circulated. It is gratifying to know that a strong expression of the approbation of

the Lords Commissioners of the Admiralty has been officially communicated to Mr. Evans for the labour and scientific skill he has bestowed upon this beautiful and useful production.

Besides the surveys above enumerated as in progress in different parts of the world, the labours of the Hydrographic Office during the past year have consisted in the publication of upwards of 80 new and corrected charts of various coasts and plans of harbours. It may enable my hearers to form some idea of the activity that prevails in this department if I mention a fact just made known to me—that during this very month of May the large number of 20,000 Admiralty Charts have been printed and the greater part sold to the public. In addition to these works the usual annual lists of lights, of notices to mariners, of tide-tables, have been published; and lastly I may conclude this portion of my Address with an announcement which cannot but deeply interest all geographers, namely, that it has been determined that the Table of Maritime Positions, giving the latitude and longitude of 8000 places on the globe, compiled with great care by our late lamented Member HENRY RAPER, shall be annually corrected and kept on a par with the latest information at the Admiralty, as the best tribute that hydrography can offer to the memory of our deeply regretted friend and medallist.

LAND SURVEYS.

Ordnance Survey.—The reduction of plans on larger scales to the size of maps by means of photography has been brought into efficient public practice by Colonel James, the able Superintendent of the Ordnance Survey Office and Topographical Department, and a report of a committee, appointed by the Secretary of State for War, of which I was the Chairman, has entirely approved of the process.

When it is known that the largest of the British surveys as now sanctioned are on the scale of 25·344 inches to a mile, or the scale of one square inch to one acre, and that the expense of reducing that enormous scale down to six inch and one inch scales by means of any mechanical contrivance such as a pentagraph must be very considerable, the employment of photography to effect this purpose rapidly, accurately, and economically, reflects the highest credit on Colonel James.

A full and detailed account of the progress of the Ordnance Survey of the British Isles, and of the preparation of the plans and maps upon four different scales, will be found in the last Report

presented to the Houses of Parliament. The account of the principal triangulation embodying the scientific results of the survey was published in the beginning of last year, and has been received with satisfaction by the scientific men of all countries.

Geological Survey of Great Britain.—Fully aware that the physical geography of a country can never be perfected until we are acquainted with the structure of the sub-soil, on which the outlines of the land depend, it is my duty to inform geographers of the progress which has been made in this branch of the Government surveys of which I am the director. In fact, the geographer has only to inspect the horizontal sections which we publish on the scale of six inches to a mile, to see how intimate is the connexion between geography and geology. Whilst coloured maps on the one inch scale have been published over a considerable portion of England, Wales, and Ireland, six sheets on a smaller scale have been issued, comprising all Wales and the bordering English counties. Lest any one should suppose that the production of this beautiful and compendious map had been favoured by myself because it includes the "Silurian Region," let me say that it was ordered by my predecessor, Sir Henry De la Beche, on account of the striking physical features of that region, and was far advanced towards completion when I took office.

Seeing the rapid progress which is made in England and Ireland, it is a subject of deep regret to me that two surveyors only are as yet allotted to Scotland. Knowing the extraordinary value of the great coal tract between the Firths of Clyde and Forth on the one hand, and on the other the great interest which geologists attach to the acquirement of true knowledge respecting the broken and mountainous parts of Scotland, it is manifest that the surveying force there ought to be much augmented; the more so as the Ordnance Survey, under the direction of Colonel James, is now issuing rapidly sheets on the six inch scale, relating to nearly the whole of the south of Scotland. The maps on this scale are of the greatest service to the field geologist, who registers upon them all his detailed data previously to a reduction for the one inch or published map. And although the six inch maps will not be published, copies of them will be registered in the public museum of Edinburgh ready to be consulted by all proprietors who seek for accurate details. I apprehend, indeed, that even when the one inch sheet, exhibiting the geological structure of the country around Edinburgh,

is brought out (as will very shortly be the case), the public will be much struck with the value of maps in which every bed of coal is marked with precision; and I therefore trust that in the coming year the number of surveyors in Scotland will be so increased as to place that country on the footing of the English and Irish surveys.

Commencing their labours in the mountainous regions of the west of England and Wales, my coadjutors in England are now extending their works to the south-east; and seeing the great desirableness of completing as soon as possible the survey around the metropolis, I have brought about a concentration of work, which will ensure a speedy settlement of all questions respecting the subterranean drainage, sewerage, and water supply of this densely peopled tract.

Geological Survey of the West Indies.—Whilst the Government of the United States causes geological surveys to be made not only of their long settled territories, but also of tracts beginning only to be peopled, the mother country still proceeds on the old principle of never stirring till her colonists call out for scientific aid. Following the good example of their neighbours of the United States, our North American colonies of Canada appointed their own geologist, Sir William Logan, and every one versed in the sister science knows how well that able man is conducting the survey of that country. After this, the legislatures of India, the Cape of Good Hope, the Australian Colonies, and lastly, of Tasmania, have each asked for and obtained geological surveyors, most of whom had either been brought up in the establishment which I direct, or recommended by my predecessor or self: already geological maps and surveys of large portions of these countries have been constructed.

Two years ago the legislatures of the principal West India islands under British rule, requested the Government to send out geological surveyors, the half of whose expenses were to be borne by the colony explored, the other moiety by the Imperial Government.

The island of Trinidad was the first to be examined, and Mr. G. P. Wall, a distinguished pupil of the Government School of Mines, and Mr. Sawkins, were selected for that purpose. As their survey is completed, and has been placed in my hands for publication, I have no hesitation in saying that it is a work which will be of signal advantage to the inhabitants, and will be much approved by men of science.

Seeing that the only map of the island was very inaccurate, the

geologists were compelled to survey topographically to some extent for themselves before they could prepare the map now in my possession, which is very creditably executed. Though it is out of place here to expatiate upon the succession of the various rocks and fossils of this great island, still the public will be glad to learn that these geologists discovered several beds of coal which, though of tertiary age, has been found to be of good quality and available for steam navigation; and as these strata crop out upon the shore, the discovery is one of considerable importance. The work will be illustrated not only by maps and sections, but also by a multitude of beautiful sketches of the country as prepared by Mr. Sawkins.

Geological Survey of India.—Professor Oldham, the superintendent of this survey, and formerly Local Director of the Geological Survey of Ireland, has lately issued a map of part of Central India, including the districts of Nerbudda and Saugor, which is important in a geographical as well as in a geological point of view; much of it being from original surveys made by the geologists. The memoirs of the survey, of which Part II. of Volume I. has just appeared in England, comprise matters also of importance to geographers. Such for instance is the description of the curiously flat-topped plateaux of the range of the Khasi Hills, forming long swelling grassy plains, marked here and there by small out-standing hillocks which scarcely interfere with the general level. These suggest the action of long continued denuding forces at tolerably fixed levels. Deep and narrow gorges or valleys form another peculiar feature in the Khasi Hills. In these the rivers in the northern portion find their courses to the plains, the level of the stream being 3000 feet below one of the hill stations.

Remarkable evidences are adduced of the power of water in translating huge masses of rock during great floods; and altogether the manner in which Professor Oldham has interspersed the description of physical and dynamical phenomena with his geological data must commend this memoir and the accompanying maps and sections to the attentive consideration of geographers.

PHYSICAL ENQUIRIES.

Progress of Meteorology.—Meteorological science, as resting on ascertained facts rather than on theoretical assumptions, has advanced steadily in this country, and also in France and other parts of Europe.

Volumes have also been widely circulated abounding in interesting speculative ideas, and conjectural explanations, which, so far as they contain a great deal of nautical information, have been extremely useful. But I am assured by my distinguished friend Admiral FitzRoy, now at the head of the Meteorological Survey of our country, that many of these works are not to be depended upon, and are not approved so cordially by the critical few as they have been by general readers.

In Europe, the works of Humboldt, Herschel, and Dové, grounded on sound induction, constitute, indeed, a safe basis on which the numerous class of observers may rest their meteorological facts, preparing, reducing, and classifying them, for the combination of master-hands. Thus, many extensive series of good observations, at sea as well as on land, have been made. Much is already garnered up; but the winnowing of the grain from the chaff, and the ultimate adaptation of the results, must be a work of time, labour, and ability.

At the observatories of Greenwich, Kew, and Oxford, photography has been brought to aid in the registration of all atmospherical changes. Self-registering anemometers have been used for some years successfully in England, and at the Cape of Good Hope. Such an instrument is on its way to Australia, and similar valuable machines, showing every variation of wind, recording accurately, and requiring attention only once in twenty-four hours, are already erected at Halifax and Bermuda by Her Majesty's Government.

Arrangements are made by the Board of Trade and by the Admiralty—in correspondence and co-operation with the various authorities around the seaboard of the Northern Atlantic—for collecting simultaneous observations, at least once a-day, all round our nearest ocean, and upon its surface, during one year—beginning this summer. By such an investigation, as devised by Admiral FitzRoy, a complete understanding and consequent explanation of the order, sequence, causes, and consequences of atmospherical changes and conditions over a large section of the world's surface may be gained in less time than, perhaps, by any other mode of operation. The effects of atmospherical phenomena on climate and on all waters, and even on tidal action (including currents affecting the configuration of land by abrasion or deposit)—these and the bearing of such phenomena on geological or ancient conditions of the earth are only appreciated by the comparatively few who have studied them.

The immense absorption or extrication of latent heat, the un-

known amount of electrical action, as well as the chemical and mechanical combinations which occur during changes of weather (among which the presence or absence of ozone is an interesting subject of investigation); the formation and effects of ice, with the characteristics of ocean itself—are all phenomena that have been lately studied by meteorologists.

The number of meteorological observers and their dispersion over the world is now considerable. Besides Russia, Prussia, and Europe generally—India and Australia* have many well fitted stations—while the United States have spread them over a vast portion of the continent of America; a point to which I shall hereafter allude.

In Scotland, the instructive compilations of Mr. A. Keith Johnston have indoctrinated his countrymen with the desire to establish and keep up a well-ordered Meteorological Society, which is worthy of national encouragement. Following out this plan, Dr. Stark has produced a memoir, the result of two years' observations, on 'The Temperature of the Sea around the Coasts of Scotland.'† Whilst we must admit with this author, that the mild climate of Britain is, in great part, due to the prevalence of the south-westerly winds, I find that his opposition to the views of Commander Maury respecting the course and influence of the Gulf Stream is not accepted by some of our leaders in physical science.

Earthquakes and their Study (or Seismology).—In a work recently completed on the earthquakes of Switzerland, Dr. Volger has given a chronological account of all recorded earthquakes in that country from the year 562 to 1855. Illustrating his observations by an account of the geological structure of the Valais, he further describes in detail the shock of 1855, and lastly endeavours to explain the relations and causes of earthquake phenomena in general. Collating a quantity of curious data, this author attributes these paroxysms of the earth's surface in great measure to the changes and peculiar combinations of atmospheric and meteorological conditions. He combats the theory adopted by most geologists of a central heat, and also disallows the intimate connexion between volcanos and earthquakes; suggesting the falling of mountain masses into cavities, and the consequent production of shocks accompanied by much development of electricity. Not doubting that the records

* See particularly the Third Meteorological Report, with a diagram, of Barometric Pressure (for the years 1857-8), prepared by Mr. R. Brough Smyth, the director of the Meteorological Observatories of Victoria, and presented to both Houses of Parliament.

† Read before the Royal Society of Edinburgh, 3rd January, 1859.

of Dr. Volger are faithful, and that they will afford materials for the elucidation of the phenomena of earthquakes, I must say, as a geologist, that I differ from his views, and adhere to the prevalent belief that the chief cause of all earthquakes is the effort of heat and gas to burst through the cementations composing the crust of the earth. I do so, because I every where trace the most intimate relations between earthquakes and volcanicity, both in those tracts where that force is at present in action, and in those where it has formerly shown signs of emission through fissures in the older rocks. On the other hand, the large regions like Russia in Europe which, as I have elsewhere shown,* have never been affected by eruptive rocks (or in other words where the crust of sedimentary matter has never been broken through in ancient periods), are just those countries in which earthquakes have been and are unknown.

All those great movements of the earth's crust which have been so instrumental in producing and modifying from time to time the geographical features of our planet belong, I conceive, to the same class of phenomena as ordinary earthquakes, and are to be referred to similar causes acting with different degrees of intensity. Every great movement must, in fact, have been attended, towards the boundaries of the regions to which it extended, by those smaller movements, reduced for the most part to *vibrations*, to which the term *earthquake* has been usually restricted. Hence the theory of earthquakes can only be regarded as a subordinate part of any more general theory which may deal with all those movements, great or small, to which the superficial portion of the globe has been subjected, and which constitute, in fact, the basis of geological science. The smaller movements are those alone which man has had actual opportunities of observing, and hence the investigations of the phenomena attending them, and the causes to which they are assignable, have been separated from those of the allied phenomena somewhat more perhaps than some geologists might think desirable, and have been erected into a separate branch of science, under the name of *Seismology*. Dr. Young and Gay Lussac had suggested that earthquake shocks were propagated in a way analogous to the vibrations of sonorous bodies, but no attempt had been made to unite into a whole the mass of heterogeneous and other apparently conflicting facts, and account for them by the application of one consistent theory.

In February, 1846, Mr. Robert Mallet read to the Royal Irish

* See 'Russia in Europe and the Ural Mountains,' chapters first and last.

Academy his Memoir on the Dynamics of Earthquakes,* in which his object was to show that all observed earthquake phenomena might be reduced to the direct motions (in accordance with the acknowledged laws of physics and mechanics) of three distinct classes of waves, all produced simultaneously by a single impulse, and originating at a single point, namely:—1st. The earth wave or shock through the elastic crust of the earth: 2nd. The sound waves through the same, or through the sea and through the atmosphere: 3rd. The great sea waves—or fluid wave of translation which rolls in shore after the shock—to which should be added the liquid wave, which he has denominated the “forced sea wave.” He showed that the nature and sequence of the phenomena would differ as the centre of impulse was beneath the land or under the sea; and in the subsequent parts of his paper, illustrated by diagrams and maps, he indicated the bearings of his theory upon future research and its important connection with vulcanology and terrestrial physics, and thus laid the foundation for those methods of observation of earthquake phenomena which have since been very widely adopted. He pointed out the necessity for self-registering seismometers, and in the same volume of Transactions describes and figures the first completely self-registering seismometer proposed, whose functions were, by the aid of electro-chronographic arrangements, to determine the direction of motion, the moment of transit, and dimensions of the earth wave or shock. Mr. Mallet's views being founded on the admitted laws of exact science, and also distinguished by their simplicity, received the approbation of many competent judges throughout Europe.†

In 1850, at the request of the British Association, Mr. Mallet drew up a first Report upon the Facts of Earthquakes,‡ in which he discusses all anterior views, and with the guidance of his theory classifies and separates under distinct propositions the facts found scattered in multifarious confusion through earthquake narratives. He concludes by enunciating certain desiderata, amongst which were the formation and discussion of a complete catalogue of earthquakes for all time and all countries, and by submitting to the actual test of experiment the views which he had theoretically announced as to the elastic transit of the earth wave.

Funds were placed at his disposal for the purpose by the British

* Trans. R. J. A., vol. xxi. p. 1.

† See Mrs. Somerville's ‘Physical Geography,’ Humboldt's ‘Kosmos,’ &c.

‡ Trans. Brit. Assoc. 1850.

Association, and by means of a new instrument (the seismoscope) and the creation of small but real earthquakes at pleasure by mines of gunpowder fired galvanically at the distance of a mile, he was enabled to ascertain the actual relative rate of transit of the earth wave or shock in loose sand, in shattered as well as in solid unbroken granite;* it being thus determined that an earthquake cannot move slower than in sand, nor probably faster in any known rock than in granite. These experiments Mr. Mallet, with the joint aid of the British Association and of the Royal Society, has since extended to some stratified rocks. Mr. Mallet has also condensed his views into the form of instructions for earthquake observation in the Admiralty Manual, and the Article has been translated into French by Mons. Perrey, at the desire of his Government.

The laborious compilation of the vast catalogue, comprising between six and seven thousand earthquake narratives, thus early projected, had been steadily pursued by Mr. Mallet, ably assisted by his eldest son, Dr. John William Mallet, of the University of Alabama, U.S., from 1852 to 1858, and last year the 'British Association Earthquake Catalogue,' by these authors, appeared in print, with the most complete discussion by curves and seismic maps ever made, and giving, so far as human knowledge goes, the facts of seismic distribution in time and in space.† Several deductions of interest and importance have resulted from this extensive labour, the most important of which is probably the now ascertained fact, that mere farther cataloguing is useless as regards the advance of science; since Mr. Mallet considers that no great generalization can be thus elicited. Looking to the true direction in which the efforts of seismologists are to operate, he recommends observation at self-registering seismometrical establishments at suitable localities in certain earthquake regions. The latter portion of his final Report is devoted to the description of the various forms of seismometers proposed by divers authors, and he has figured the preferable forms of seismometric apparatus to be adopted, which have resulted from the labours and experimental investigations of several years. The electro-seismic trigon, as his arrangement may be called, as well as the various simpler and ruder methods of approximate observation pointed out to the traveller in the Admiralty

* Second Report, Trans. Brit. Assoc. 1851.

† Mr. Mallet and his son acknowledge the important lightening of their labours by the previous large and valuable catalogues of Von Hoff, and especially of Professor Perrey of Dijon, to whose collaboration in the seismic field they give the highest praise. (See Mém. Acad. Roy. de Belgique, tom. vii., in oct.)

Manual, should be known to every geographer who devotes a portion of his time to observations on terrestrial physics.

Lastly, Mr. Mallet under great privations re-explored, almost immediately after the recent occurrence of the great earthquake, the provinces of the kingdom of Naples, nearly from Bari to Calabria, and has collected many striking particulars, including great topographical changes of the surface, an account of which will be laid before the Royal Society of London, at the desire of which learned body he made his journey, and I look forward with deep interest to the publication of his results.

NEW PUBLICATIONS, MAPS, SURVEYS, ETC.

The 'Manual of Geographical Science' (Parker and Son), the first part of which appeared in 1852, having been completed this year by the addition of a well digested volume, can now be recommended to the public as a most useful and instructive work. The first portion embraced mathematical geography, physical geography, cartography, and geographical terminology. The new volume contains a learned and interesting history of ancient or comparative geography, by the Rev. W. L. Bevan; whilst the last 400 pages of the book, which are written by our indefatigable associate the Rev. C. G. Nicolay, are devoted to the progress of maritime discovery, and a description of the surface of the earth as now known to us. The lucid manner in which this author explains the relations of land and water, as well as all the leading physical outlines and waterpartings of continents, must have a most beneficial influence in impressing upon students the elements and principles of geographical science.

Among the communications to our Society I was much gratified to find the eminent astronomer, Sir John Herschel, coming before us in the last session with a new and ingenious projection of the sphere. The author shows that his projection offers several peculiar advantages for geographical purposes, particularly when the whole, or at least the whole accessible part of the globe, has to be mapped down on one sheet.

The astronomical experiment on the Peak of Teneriffe, which was carried out in 1856, under the sanction of the Admiralty, by Professor C. Piazzi Smyth,* is chiefly of interest to this Society

* Parts of this work were published in the 'Philosophical Transactions'; but the whole work, as now brought out by the Admiralty, 1859, contains three additional

from the observations of the Astronomer Royal of Scotland on the optical, atmospheric, astronomical, and physical phenomena, made at great altitudes on this volcanic mountain. We have particularly to thank him for his topographical descriptions, and for producing a striking relief map taken from a model prepared by Mr. Nasmyth, after determinations of the author, which reminds us of maps of the surface of the moon.

The works produced during the past year by our excellent cartographer, Arrowsmith, are:—1st, A Map of the Provinces of British Columbia and Vancouver Island, with Portions of the United States and Hudson Bay Territories, compiled from original documents, showing also the various Passes across the Rocky Mountains; 2ndly, a Map, in eight sheets, of the Island of Ceylon, constructed from a base of Triangulations and corresponding Astronomical Observations, during his employment on the staff of the colony, by Major-General John Fraser, late Deputy Quartermaster-General, reconstructed, incorporating a great number of original documents, and connected with the Great Survey of India; 3rdly, a Map of the Eastern Half of Australia, constructed from official and other original documents, adjusted to the Maritime Surveys of Flinders, King, Wickham, Stokes, Blackwood, Stanley, &c. This map, which is on six sheets, will show the route of many Australian travellers.

Mr. Arrowsmith is also about to publish other Maps, including a Map of the World, on two sheets, showing by repetition the connection between England and the Australian Colonies, both by the Cape of Good Hope and Cape Horn.

Having called your attention in days gone by to the improvements made in cartography by Mr. A. Keith Johnston, and to his zealous and successful endeavours to lay before his countrymen, on maps, all the chief data of physical science, I have now the satisfaction of adverting to his last important work—a new General Atlas. Fifteen years having elapsed since he published his National Atlas, the author felt that the time was come for the production of an entirely new work, which should embrace all the recent discoveries and all the territorial changes. In accomplishing this task, Mr. Johnston has succeeded in placing before the public a series of sheets of each region on a very convenient scale, and

chapters—Geology and General Topography, Botany, and Miscellaneous Observations, including the author's ingenious method of eliminating the angular motions of a ship at sea, to which I alluded last year.

by a judicious selection of names, arranged on a special index accompanying each map, he at once directs the observer to the position of any place through the medium of letters of reference. But that which most pleases the eye and instructs the looker on is the remarkable distinctness which is given to every water-course, lake, canal, or railroad by the use of "light blue ink." By this process the orography and skeleton of each country stand out in clear relief, the coast-lines never confusing the student. In short, this atlas, of which two parts out of ten are now issued, will, I have no doubt, be generally approved, and its sale will, I trust, reward the author for his long and arduous labours.

Nelson's Atlas, of which one portion has been published, is an excellent and carefully executed work, of that class which reflects so much credit on our Scottish geographers, and is an evidence of the great and increasing interest taken by the general public in geography. This atlas gives the distances and measurements in English miles, a mode better adapted for length and area than for angular measurements, and which is to be elucidated by an index which will give the distance of each place from London in English miles. By consulting this index the position of any place on the map can be at once found, whilst its geographical position on the globe is told off in the language of common life. As I am informed that the calculations for the index involved several months of labour, I hope that the efforts of the publisher may be recompensed by a good sale.

I must also call attention to the '*Weekly Dispatch Atlas*,' comprising a series of excellent maps (issued one every week) with that paper. These maps include the English counties, as well as general maps,—some of them on a very large scale (India, for instance, being in 8 sheets). The maps are compiled from the latest authorities, and chiefly by Fellows of this Society, including Mr. Weller, Mr. Lowry, Mr. Dower, &c. The atlas will contain about 250 maps, of which 90 are already published.

Owing to the changes that have taken place since the '*Gazetteer of the World*,' by Fullarton and Co. of Edinburgh, was first issued, a new edition of the first volume of that work, bringing up the geographical and statistical information to the present period, is in course of publication. The '*Royal Illustrated Atlas*,' by the same publishers, and to which allusion was made in my Address of last year, has been continued, and will, it is said, be completed during the present year.

The 'Imperial Atlas,' by Blackie and Son, the compilers and publishers of the 'Imperial Gazetteer,' is now finished, and consists of 31 parts, containing 78 beautifully engraved sheets, and comprising upwards of 100 useful maps. An index to the work is, I understand, in course of preparation.

CONTINENT OF EUROPE.

Germany.—Among the larger cartographic works published by the establishment of Justus Perthes at Gotha, which are now attracting particular attention, is Mayr's Atlas of the Alpine Countries. Three sheets have appeared, and the remainder will, it is said, be completed this year. It is on the scale of $1:55,555$, consists of nine sheets, and extends from the valley of the Rhone on the west to Vienna on the east, from Strasburg on the north to Nice, Leghorn, and Ancona on the south; thus comprising the seat of the present war. No map of this extensive region has been published on so large a scale. Of the usefulness of this work a proof has recently been given by the fact, that 45,000 copies of the part which refers to the seat of war were, I am told, recently sold in a fortnight.

A condensed edition of Dr. Barth's Travels in two small volumes, commenced in parts, will be finished before the close of the year, and will be a welcome edition to many readers, for whom the five volumes of the first edition are too bulky and tedious.

A large Historical Map of Europe by K. von Spruner, the well-known author of the large Historical Atlas, is nearly ready for publication. It is executed at the instance of the King of Bavaria, consists of nine sheets, and is drawn on the scale of $1:886,888$. It is very elaborately printed, and represents in three principal colours the three epochs—of ancient geography, of the middle ages, and of modern time. An Historical Atlas of the Austrian Empire, by the same author, is also nearly ready.

An important work on the glaciers of the Tyrol by the Austrian Major Karl von Sonklar is in preparation, and will soon be published. This officer has made most extensive observations, not only of the theory of glacial development, but more particularly of their connexion with meteorological phenomena in general. His beautiful surveys, plans, and illustrations of the glaciers can scarcely fail to command attention.

I am happy to learn that a work illustrative of the geology of

Bavaria, surveyed and described under the direction of C. W. Gümbel, will be published in the establishment of Justus Perthes, by authority of the Bavarian Government. Another geological work by Von Richshofen, member of the Austrian Imperial "Reichsanstalt," will also soon be published. One volume of 'Travels in Palestine,' made by Dr. Titus Tobler during the year 1857, is, I am told, nearly ready for publication.

Lastly, from what I know of their usefulness, I can well understand that the 'Geographische Mittheilungen' should have been so generally encouraged and approved of, that they are to be greatly extended in the form of extra numbers, the publication of which will commence this summer. Like the fifth part of last year's numbers, which gave a résumé of the geography of South Africa, including the remarkable journeys and discoveries of Livingstone, each of these extra parts will contain one subject only.

In mentioning the works of German writers, I must specially allude to the last travels in Palestine of the late Dr. Roth. This able and well-known traveller, a Professor of Munich, whose hypsometrical measurements in the Wadi Araba were mentioned in my previous Address, died, I lament to say, of fever last summer at Hasbeiyah in Anti-Lebanon, after making several tours, the results of which have not yet been published. Thus, in exploring the countries east of the Jordan, he reached (March, 1858) Kerek and Tafileh, remained at both places for some time, and investigated the natural history and meteorology of that little-known region. Subsequently he returned to Jerusalem, and thence went northwards to the upper basin of the Jordan and the range of Anti-Lebanon. Some of the last points visited by him were Mount Hermon, Lake Phiala, Baneas, and Hasbeiyah; having previously obtained many valuable scientific results. Among his former labours it will be remembered that he accompanied Schubert and Erdl in 1836 and 1837 to Palestine, as well as Major Harris in his mission to Shoa in 1841-1843. Just as in his preceding tours through the Wadi Araba and other parts of the Holy countries, Dr. Roth bestowed great pains in fixing the altitudes of his route and of the chief points visited, and his observations will be found to be among the most trustworthy hitherto made in Palestine. These altitudes, together with various meteorological observations and the last papers of Dr. Roth, having been put into the hands of Dr. Peter-

mann for publication in the 'Mittheilungen,' that gentleman has obligingly sent me the subjoined list of heights in French feet.*

Russia.—The accomplished Secretary of the Imperial Geographical Society, M. Lamansky, has transmitted to me his clear and well condensed 'Compte Rendu' of the progress of that body, and has this year prepared an Appendix, which the geographical reader will find most instructive and useful, since it enumerates all the works bearing on our subject which have been published in the Empire of Russia.

But besides the important expeditions in operation and the production of works, to some of which I called your attention last year, and others which are mentioned in the last résumé of M. Lamansky, our correspondent has recently made me acquainted with information which I hasten to communicate.

The Geographical Society of St. Petersburg has this year sent forth M. Schmidt, an able geologist of the University of Dörpatt, well known to me by his valuable researches among the Silurian and Devonian rocks of the Baltic provinces of Russia, to study the structure of the great basin of the river Amúr and of the island of Sakhalin, and to report upon the geological relation and mineral wealth of this vast region. Following the judicious plan of thoroughly working out the details in every examination of a new country, the Imperial Government, counselled by the Grand Duke Constantine and the Geographical Society, have ordained that this expedition of M. Schmidt shall be employed for three or four years, during which time the explorers will not confine their researches to the banks of the great river, but will push up its affluents, into the large mountain chains from which those streams descend. The great chain of Khin Jhan and the large island of Sakhalin, both highly interesting in a geological point of view, will be specially explored, and, looking to the unquestioned talents of the leader of the expedition, we may hope, with great success.

Another expedition has been sent into the heart of Central Asia to beyond the river Ili and the Lake Balkhash in the Kirghis

* Mount Hermon, 6975 (according to Major Scott's observations, 8798); Hasbeiya, 2354; Baneas, bridge over the Jordan, 1194; Lake Phiala, 3100; Lake Meron, 265 (according to Bertou, 322); Safed, 2619 (according to Symonds, 2604); Tiberias, near the Castle, 523; Mount Tabor, 1754; Nazareth, 1187; Mt. of Olives, 2596; Zion, Christian Cemetery, 2530; Hebron, 2738; Kerek, 3318; Tafileh (Lower), 3363.

steppes, to the confines of Chinese Turkestan. The chief object of this survey, which is conducted by Capt. Jolubeff, is to determine the geographical position of the principal points, so as to lead to the construction of an exact map of those wild countries which so many Russian travellers, including M. Semenoff, have already explored, and whose labours will thus be brought together and registered on accurate maps.

An important expedition to Khorassan has returned from Herat, and the general résumé of its labours, which has been alone as yet made known, is highly satisfactory. This vast region has hitherto been slightly examined only by accurate topographers, and the Russian geographers have therefore been able to make many corrections in the pre-existing maps. Among other errata M. Khanikoff cites in his report, that the town of Tebes of the old maps must change position to the extent of $1^{\circ} 30'$ of long. to the west, and 1° of lat. to the south; whilst numerous corrections are applied to the general configuration and orography of the country as laid down on previous maps. Other data, which have been got together respecting the geology, botany, zoology, ethnography, and historical monuments of this little explored region, give to this expedition to Khorassan the scientific importance of a general survey.

The river Ussuri, one of the affluents of the great Amúr, and which constitutes the boundary between Russia and China, was last year examined by Captain Veniukoff, and for the first time its banks were examined in their whole length. The French missionaries De la Brunnière and Venant had indeed explored this river partially, but, unfortunately, the assassination of M. de la Brunnière was accompanied by the loss of all his papers. Starting from the mouth of the river, M. Veniukoff ascended the chain of mountains from which it flows, and descended to the sea in the Gulf of Vladimir; and the description of his journey, with two maps, which is published in the Journal of the Imperial Geographical Society, which we are about to receive, will no doubt be viewed with deep interest by all true geographers.

The geographical science of the empire is about to receive a great addition in a general admeasurement of the levels of Russia in Europe, on a plan laid before the Government by Professor Otto Struve, of the Imperial Observatory of Pulkowa, and on the basis of preliminary observations carried on by him in the environs of St. Petersburg. This operation will doubtless prove of immense advantage in all industrial and engineering works. Professor

Struve has farther instructed and organized two parties intended to make astronomical observations on the frontiers of Russia and China, and particularly with the view of determining the cartography of the country adjacent to the great internal lake of Issyk-kul.*

Sicitzerland.—Our indefatigable correspondent, M. Ziegler, acquaints us, that through the energy of General Dufour, who directs the survey, the great map of Switzerland is tending rapidly to completion, six sheets only remaining to be finished; three of which have been plotted. M. Ziegler has also forwarded to us a map which he has prepared to show the positions of all the Celtic remains found in Switzerland up to last year.

In alluding to the progress of geography in a country of such striking configuration, and in exploring the structure of which I have spent many enjoyable days, I commend to your notice a beautiful work just published, entitled ‘The Peaks, Passes, and Glaciers of Switzerland.’ This work is the produce of the Alpine Club, an association already numbering more than 100 members (many of them Fellows of our Society and friends of my own), who, instigated by the writings of Agassiz, James Forbes, Studer, and others, have devoted their energies to the special object of exploring and making better known the highest and most inaccessible portions of the Alps.

In the last five years these Alpine volunteers have succeeded in ascending the highest point of Monte Rosa, the Dom, the Great Combin, the Alleleinhorn, the Wetterhorn Proper, and several other peaks never before scaled. The narratives of the adventurous undertakings set forth in this volume contain evidences of perseverance and personal endurance under difficulties which make us rejoice that our enterprising countrymen should

* Among various other geographical operations of which I have just received notice from Mr. Petermann, the following may be mentioned:—Trigonometrical surveys have been made in the last year in the Governments of Kostroma, Voronezh, &c., and on the right bank of the Volga from Saratov to Volsk. Astronomical operations have been carried on in Viatka and Vologda. Travelling over 10,000 versts in five months, the two astronomers employed fixed 38 points in the first, and 37 in the second of these large Governments, which, from personal experience, I can testify are not easily traversed. Topographical surveys are being executed in the Governments of St. Petersburg, Estonia, Kharkov, &c., including enlarged plans of various towns. Beyond the limits of Russia in Europe a vast region, extending from the country of the Cossacks of the Ural (including the Ust-Urt) to the Bay of Kara Boghas, as well as on the east side of the Aral Sea, has been surveyed. The results of the survey of the boundary-line between Turkey and Persia, executed by a Commission composed of Russian, English, Persian, and Turkish surveyors, are now being laid down in the Dépot de la Guerre at St. Petersburg, on the scale of 1 : 75,500.—June, 1859.

have collected a mass of information of great interest to the lovers of adventure whom I now address.

Knowing the ability with which my friend Mr. John Ball can master any branch of natural history science, I congratulate the Alpine Club on having secured his services as their editor. With such contributors as those whose names appear in this volume, we may feel sure that many other Alpine scenes will be racyly and faithfully delineated. One of the most interesting communications in the estimation of a geologist like myself is the comparison by Professor Ramsay of the former and very ancient glaciers of Snowdon in Wales (which come into the category of geological dynamics) with the less ancient glaciers of Switzerland, from the moraines of which the ice has shrunk away within the historic period.

The lively descriptions of the tourists, and the chromo-lithographic sketches of the chief scenes, will attract many a traveller to the Alps; whilst the accompanying little maps will be found clear and useful.

France and other Continental Countries.—As our Library contains the full Report of the Proceedings of the Geographical Society of France, it is unnecessary that I should swell this Address by giving extracts from that useful and meritorious publication; and as I have not this year been favoured with the official Report of the progress of the surveys by land and by sea in France, Spain, or Italy, I am unable to allude to them. It is, however, gratifying to me to learn that the geographers of France have recompensed the brothers Schlagintweit, on whose discoveries I dilated last year, with the gold medal of the French Society.

ASIA.

Persia.—We have been indebted to the Hon. C. Murray, H. M. Minister at the Court of Teheran, for communicating to us an interesting account of the ascent of Mount Demavend by Mr. Thomson and Lord Schomburg Kerr, who are attached to his mission. Besides travelling over and describing an extensive portion of the mountainous region between Teheran and the depression which extends to the Caspian Sea, these zealous diplomatists made three ascents of Demavend, and, measuring its altitude by boiling water, came to the conclusion that the summit (which is composed of volcanic and sulphureous materials) was 21,500 feet above the sea. In support of the measurement of our countrymen, I learn by a letter recently

received from M. Otto Struve, of the Imperial Observatory of Pulkowa, that by his deductions, calculated in 1851, from M. Lenne's geodetic observations, made in 1838 (see 'Memoirs of the Imp. Acad. of Science,' 1851), Demavend had the height of 20,085 French feet assigned to it. This independent testimony is of great value; the approach to agreement being the more remarkable, considering the comparatively feeble instruments employed both by the Russian and English parties.

Hence is it certain that Demavend is much loftier than the Ararat of geographers, which lies at the south end of the Caucasus, and has an altitude of 17,112 feet only. But if that name is to be applied to the highest summit in Western Asia, we are assured by Sir Henry Rawlinson that Mount Jidi, overhanging the plain of Assyria, is much higher than Demavend, and is actually considered by the inhabitants to be the mountain on which the Ark of Noah rested. As our eminent medallist Sir Henry is about to proceed to Persia, there to represent our Sovereign, we may feel assured that, with his love of research, he will not quit his post until he has taken steps to clear up these points, and also to make us better acquainted with the geography of the interior of Persia, particularly that portion of the kingdom which lies adjacent to the Caspian Sea.

In the observations I offer on the progress of geography among the Russians, the reader will find that the recent expedition of M. Khanikoff has produced a greater rectification in the positions of some important places.

China, Japan, and New Guinea.—The additions to our acquaintance with the coasts, ports, and interior of the vast Empire of China, which have been made during the last year, are very considerable. By the judicious and decisive measures of Her Majesty's Ambassador, the Earl of Elgin, and the skill and energy of our naval armaments, commanded by that excellent officer Admiral Sir Michael Seymour, combined with those of our allies, the river Peiho has been ascended, the great port of the capital occupied, and a treaty prescribed to the Imperial Court—the first example of equal diplomatic relations between China, Japan, and the commercial nations of Europe and America.

Our zealous and enlightened associate, Captain Sherard Osborn, commanding the *Furious* steam-frigate (in which Lord Elgin sailed), has furnished us with vivid descriptions of the nature of the coast,

soundings, and anchorages between Shangae and the Gulf of Pecheli, as well as with accounts of that gulf and of the river Peiho.* This officer has not only the talent of clearly developing the geographical features of a country, as well as the characteristic habits, trades, and occupations of its inhabitants, but he does this in such lively and attractive language, that the reader of our Proceedings can now precisely picture to his mind's eye how Shangae has risen to its present state of opulence, can fancy himself lying at anchor in the Gulf of Pecheli, sounding the bar of the Peiho, or disembarking among shoals of canoes while pressed upon by curious Chinese, as he wends his way through Tien-sin, the populous and filthy great port of the capital.

But of all the operations which have been carried on in China, no one has proved so truly surprising to the geographer as the recent ascent of the great river Yang-tse-Keang by the Earl of Elgin. On this remarkable occasion we are again in company with Captain Sherard Osborn, who, together with his excellent officers, has given us a detailed chart of the river. We have been also furnished with an admirable description of the operations of this successful voyage by our Associate Mr. L. Oliphant, the Secretary of Lord Elgin—already well known in the literary world; so that from the combination of the talents of these gentlemen, documents relating to the course of the mighty stream have been laid before us which are of the deepest interest to the geographer, the statist, and the merchant.

It may fairly be said that never was an expedition of this nature carried out under such strange and striking circumstances; for never before did a squadron of armed steamers, one of them drawing 16 feet of water, penetrate into the interior of a great continent for between 600 and 700 miles—a distance equal to the length of the Danube in a straight line from its mouth to near Vienna. Again, when we consider that large portions of the banks of the river were occupied by a hostile rebel force, the batteries of which offered resistance at two critical points of the voyage, and that the whole tract was more or less in a state of ruthless civil war, our astonishment increases. Such an achievement it may safely be said would have been impossible in any other age than the one we live in. On referring to the chart of Sherard Osborn and his naval associates, we find that this wonderful voyage to and fro, *i.e.* for a dis-

* See the account of the statistics of the port of Shangae.—Proc. Geogr. Soc., vol. iii., p. 37.

tance of about 1250 miles, was performed in the short space of 46 days, exclusive of 12 days spent off the city of Kew-Keang; and, when we peruse the lively and clear description of Mr. Oliphant, our surprise rises to admiration. It is then that we find what difficulties our gallant seamen encountered and overcame, caused by the extraordinary changes which are continually going on in the banks and bottom of the great river. Seeing that in the year 1844 the river had been already and accurately surveyed, as far as Nankin, by those excellent officers Kellett and Collinson, it might have been expected that up to that point at least, the charts might to some extent be depended on; but, as Oliphant narrates, "24 hours had scarcely elapsed before every ship in the squadron had discovered a new sandbank by feeling it with her bottom. Shoals had been converted into islands, or had disappeared altogether, and the spot formerly avoided as a danger was now discovered to be the deep and safe channel. But this entire transformation was not confined to the bed of the river alone. In some places its banks were similarly affected, former landmarks having disappeared or become so altered as to be no longer distinguishable." Farther up the stream, as the voyagers neared Nankin (and where landmarks have not changed), 6 feet of water only were sounded where Collinson had found 6 fathoms. These remarkable variations, common to all rivers having a long course over alluvial tracts, although not to the same extent, show that if a steady commerce is hereafter to be carried on, the re-surveys of the stream must be frequent.

A few observations on these striking natural phenomena may here be permissible. Descending in two main streams from the Pering mountains, which divide China proper from the unknown regions of Tartary, the Yang-tse-Keang, which is estimated to have a length of 3300 miles, is thus remarkable in being navigable by large ships for upwards of a fifth part of its whole length! Being the largest river in the Old World of geographers, and exceeded only by the Mississippi and the Amazon in the New World, this long body of water is swelled by numerous affluents, chiefly from the north, but also by some on its southern shore. The former, flowing from lofty snow-covered mountains, and consequently rushing forth with great vehemence in the early summer season, necessarily carry down with them vast quantities of sand and detritus, thus explaining how, in its course seawards, the trunk-stream is either rapidly obstructed in one part of its bed, or deepened in another by new and powerful currents. Thus it is that in no part of the civilized world

has man been more stimulated than along large portions of the banks of the Yang-tse-Keang, where the moveable surrounding objects have compelled him to apply his industrial and inventive talents. For, after the floods of the rainy season have retired from the lagoons and temporary shallow lakes which spread out from the great central river of China, wherever its banks are low, the inhabitants flock rapidly to the desiccated soil, cultivate it zealously, and inhabit temporary dwellings until the next approaching inundations drive them into higher grounds.

The accumulations and excavations occasioned by the Yang-tse-Keang are indeed good illustrations of certain geological phenomena. They teach us to be cautious in inferring that much time has necessarily elapsed in forming masses of ancient sediment which have since been converted into stone. For example, the geologist who has drawn his conclusions mainly from countries watered by rivers that rise in low hills, carry with them little detritus, and exercise a small degree of degrading power, might naturally suppose that a cliff of sandstone, of 30 feet in height, composed of layer over layer, must necessarily have occupied many years in its formation ; whilst the Yang-tse-Keang, fed by affluents descending from lofty snowy mountains, accomplishes such a deposit or excavates a deep channel in a single season ! Hence we see the impossibility of inferring, from physical features alone, that thick accumulations of sediment or the deep denudation of lands have necessarily been periods of great duration, and hence it follows that the evidences obtained of the entombment of different animals in the successive accumulations which under pristine physical conditions have enveloped the globe and thickened its crust, when combined with the signs of their order of superposition, are by far the surest proofs of the vast antiquity of our planet.

Apart from such natural phenomena, the voyage up the Yang-tse-Keang has made known to us many circumstances deeply exciting to the political and mercantile communities ; though the sketch of Mr. Oliphant would lead us to modify to some extent the alluring picture of wealth and prosperity of the interior which some writers have drawn. The rebellion has, however, caused a wide-spread desolation, which is feelingly narrated. Opulent cities have been razed to the ground and converted into jungles, where wild animals have occupied the resorts of man.

Independently, indeed, of the rebel devastation, Mr. Oliphant seems to be of opinion that the views formerly entertained of the

teeming population and extreme cultivation of the region watered by the great stream have been exaggerated. He is disposed to think that even prior to rebel invasion the cities never could have equalled in number or extent the accounts which have been current respecting them. Thus, instead of a population of 8,000,000, ascribed to the three cities of which Han-Kow is the chief, he is disposed to reduce the cipher to an eighth part of that number. On this head, however, we have the authority of the great Chinese scholar, Sir John Davis, who, with my lamented friend Sir Henry Ellis, partially ascended the Yang-tse-Keang in 1816, to prove how very abundant and flourishing was the population before the country was cursed with a pestiferous rebellion, which, under the false pretence of Christianity and religion, has enabled a collection of lawless and destructive freebooters to paralyse the industry of a great country. I would indeed fain hope, that the Imperial Government of China may be aided by foreign states in suppressing this noxious and devastating insurrection; for there can be little doubt that the nations interested in establishing a steady commerce with China could, if they willed it, re-establish the Imperial Government in full possession of the country, and thus strengthen the union which has happily at last been effected.

Let us, then, turn with hope to the picture of the internal commerce sketched out by our associate, Mr. Lockhart, who last year placed before us those data on Chinese authority respecting the importance of the great interior port of Han-Kow, which have been entirely confirmed by the exploration of Lord Elgin. We may, indeed, feel certain that when commercial relations are established with that port, to which Mr. Lockhart specially directed attention, smaller vessels will soon pass still farther up the river to new and important stations of intercourse with the natives; whilst daring travellers, no longer experiencing the difficulties which beset them of old, will penetrate towards the very sources of this mighty stream,*

* I learn from Mr. Joseph Edkins, the associate of Mr. W. Lockhart in China, that the Chinese possess written records of all the enormous changes which the great river Yang-tse-Keang as well as other streams have undergone for many ages back. The fertilizing of large tracts by fresh water floods—the barring out of the tides by which the salt water would have sterilized good lands—the regulation of the system of canals and embankments, are explained in works mentioned in the brief but pregnant announcement of Mr. Edkins, which will be read before the Society, and printed in our Proceedings. Some of these works are among the oldest geographical documents. Thus, the Section of the Shooking (Book of History) called Yu-Kung consists of a geographical description of China in the time of the famous Emperor Yu, who, about 2000 years before Christ, restored the country to a condition fit for agriculture after a great local deluge. On his return to China, Mr. Edkins will work out many curious data of the comparative geography of this singular and learned people.

and eventually make us acquainted with that vast interior which separates China from Hindostan. In the mean time let me commend to the perusal of all those who desire to become acquainted with the internal resources of China and its trade a most instructive short pamphlet of my friend Mr. John Crawfurd. That paper, which was given as a popular lecture before the Philosophical and Literary Society of Leeds, is the clearest and best condensed account of the people and productions of this remarkable empire which has fallen under my notice.

Japan.—Although Marco Polo, in the thirteenth century, first brought to Europe the intelligence of the existence of the chain of volcanic islands now known as Japan, this empire—one island of which is as large as Britain—has remained to a great extent unknown to us. Early in the fifteenth century, and for the brief space of ten years, a British factory existed at Firando, but that intercourse was abandoned for more profitable ventures.

To the Dutch, who have contrived, in spite of much opposition, to maintain their commercial intercourse with Japan, we are chiefly indebted for any knowledge we possess of its inhabitants. Kämpfer, indeed, opined that owing to the dangerous access to their shores, and to the prolific nature of the soil, nature seemed to have destined these islands to constitute a secluded world within themselves. Yet, the barriers have now been broken down, and the fertile Japan is opened to the commerce of the West.

As our kinsmen of the United States had the merit of leading the way in obtaining this result, we also may now rejoice that through the sagacious conduct of Lord Elgin, aided by the vigorous naval movement of Sherard Osborn, Britain has obtained that full share in the commercial advantages which are likely to flow from the new treaty.

In the treaty concluded by Lord Elgin at Yedo, or, as it is usually written by us, Jeddo, several of the restrictions enforced upon the Dutch are not applied. Hitherto, the intercourse of Europeans with Japan being confined exclusively to the small Dutch factory at the extreme point of the empire, has exercised no influence whatever upon the mass of the population. They have been as effectually secluded from the rest of the world as if the great island of Desima did not exist, nor have the products and manufactures of the West penetrated as yet into the cities and villages of Dai Nipon. Doubtless, it may require time to create wants in a population hitherto so independent of the rest of the world, but the

acquisitive and imitative instinct of the native of Japan is so remarkable that he will rapidly discover the merits of Western arts and manufactures, and apply them to his own uses. Already, as Mr. Lawrence Oliphant informs me, the Japanese is a sufficiently experienced navigator and scientific engineer to dispense with the assistance of foreigners in steaming from Nagasaki to Yedo—a voyage which usually occupies a week. Again, as the same informant tells me, one of the most enlightened princes has laid down an electric telegraph between his palace and the chief cities of his province, whilst a diving-bell and Nasmyth's hammer are in full operation, under Dutch supervision, in the harbour of Nagasaki. There is, therefore, no reason to doubt that these people will be less ready to adopt our manufactures than our scientific inventions. With six ports open to the unrestricted transmission of imports into the interior, our home products will, in all probability, penetrate into every corner of the empire. In the winter, the furs and cloaks padded with cotton will be replaced by woollens, a production unknown in Japan, where sheep have not yet been introduced. Again, sugar, one of the few articles for which they depend largely on China, though now a luxury, may easily be rendered a necessary of life; for it can be far more cheaply furnished by our merchants from such countries as Java, Siam, and Bengal than from densely-peopled China, which itself receives supplies from some of these countries.

Situated in a temperate latitude, and with an industrious, ingenious, and docile population, which is probably not overestimated at 40,000,000, Japan is marked by productions not very dissimilar from those of the south of Europe. One of the most remarkable of these is insect wax, a cargo of which has already reached this country and proved a most profitable investment. Camphor, silk, and tea of a superior quality are produced in great quantities, as also hemp, flax, and tobacco. In their manufactures of iron, copper, glass, wood lacquering, China paper, steel, &c., the Japanese have attained such great perfection that the Western manufacturers may even gain some useful hints from them. Without, however, entering into farther details, or venturing upon an oversanguine estimate of the capabilities of this new field for the energy and enterprise of Europe, we may augur well from this fact, that between thirty and forty millions of such customers have been added to our list. Nor while we appreciate the advantages of this new market are we unmindful of the benefits to geographical inquiry which are likely to result

from this most interesting field of exploration. We know at present but little of the topographical configuration of the country beyond the meagre accounts we have received from the Dutch. The Japanese themselves have, indeed, graphically illustrated some of the most striking features of the natural scenery and customs of their country, and in a manner which shows no small proficiency in art. Ere long the singular scenes around the great volcano of Fusi jama will doubtless be visited by our travellers, as Lord Elgin's treaty secures for the British Consul-General and all gentlemen connected with him the right to visit every part of the empire.

Let us hope, however, that the intercourse of other nations with this peculiarly ceremonious race—in which woman occupies a higher station than in any other Asiatic country; where the habits of the people are neat, clean, and orderly; where the laws are short and clear, and where professional lawyers are unknown—may not bring upon these hitherto secluded lands those curses of demoralization which too often attend upon the influx of a higher civilization.

Indian Archipelago.—The additions to our knowledge of the Indian Archipelago for the year are confined to two papers, supplied by Mr. Alfred R. Wallace and Mr. John Yeats. These relate to New Guinea, after Borneo the greatest island in the world, and, at the same time, the least known. Both papers furnish the largest and most authentic contributions to our knowledge of this tropical, forest-clad land, little less than double the extent of Britain, and inhabited by austral negroes in a social condition incomparably lower than that of any of the negro tribes of Eastern or Western Africa; but, rude as it is, destined, I have no doubt, in time to rise to importance in relation to the adjacent Australian continent, where wool, gold, and British enterprise are rapidly creating a mighty empire.

Mr. Wallace, who last year furnished us with an authentic and valuable description of the neighbouring and curious group of the Arru Islands, was, as he himself truly observes, the sole European inhabitant, and we may safely add, the sole civilised being, of New Guinea for three months. The researches of this skilful naturalist were necessarily confined to a small portion of the island, Doree, which lies at the western extremity of the great bay which indents its northern coast. Mr. Wallace's paper supplies us with by far the best account of the geology and geography of the place he

visited, while other Societies have properly received his contributions to botany and zoology.

The paper for which we are indebted to Mr. Yeats is a translation from the Dutch of Dr. Salomon Müller, the learned and judicious naturalist of one of the expeditions which the Dutch Government sent out for the exploration of New Guinea in the years 1826, 1828, and 1835. It describes a considerable portion of the south-western coast of this hitherto unknown country, and is itself a small portion of the great work on the people, languages, natural history, and resources of the Dutch possessions in India, composed and published under the auspices of the Netherland Government. Should the enlightened recommendation of Sir William Denison, alluded to under the heading of Australia, and backed as it has been by the Council of this Society, meet with the approbation of our own Government, we may hope to see the worthy example of the Dutch Government followed on a still larger scale.

In speaking of the Indian Archipelago, it may not be out of place to mention that by a recent and practical examination of the coal-fields of Borneo, those of the British island of Labuan have been found to be incomparably the best as to quality, extent, and facility of working. Our capitalists have not been slow to take advantage of this, and are about to work the mines. It would be superfluous to dwell on the vast advantages of a cheap supply of coal in our present enlarged intercourse with Australia, China, Japan, Siam, and the islands of the Archipelago.

Mr. H. Wise, a gentleman long familiar with the question of Indian navigation, has furnished the Society with an ingenious Memorandum (accompanied by a map) on the means of shortening the route from the Western world to China and Japan by cutting a ship canal through the narrow isthmus which divides the Gulfs of Bengal and Siam. Communications on the subject have also been received from Sir Robert H. Schomburgk, our Consul in Siam. The subject is not, however, ripe for discussion, and all that I need observe upon it at present is, that it is one which comes eminently within the province of the Geographical Society, and is well entitled to our best consideration.

Admiring and respecting as I do our eminent Medallist Sir James Brooke, whose skill, perseverance, and courage laid the foundation of an important settlement in the Eastern Archipelago, I cannot close this brief reference to that region without expressing my gratification that at a period when the health of this dis-

tinguished man has been materially affected, he should have met with that generous sympathy and support of a large body of his enlightened countrymen, which will, I trust, act as the best restorative of a frame which has been overworked in the great endeavour with which his name will ever be associated.

AFRICA.

Discoveries of Burton and Speke.—The last discoveries in the interior of the eastern side of this great continent have already been adverted to in the adjudication of our Founder's Gold Medal to Captain Burton.

In the few words I addressed to that distinguished explorer in presenting to him that Medal, a brief but pregnant allusion was made to the labours and researches of his associate Captain Speke; and in now expatiating on the results of their remarkable and successful explorations, the chief of the expedition, who is already well known by his bold peregrinations and publications, will, I am sure, be happy that I should offer in the annexed note * a slight sketch of the antecedents as well as of the special duties executed by his companion.

Returning to Europe from Aden, both Captains Burton and Speke sought and obtained employment in the Turkish contingent of the allied armies operating in the Crimea. Thrown out of their military career by the peace, they returned to the east coast of Africa, with the view of exploring the country from the coast of Zanzibar as far inland as might enable them to ascertain the real geography of the interior in that latitude.

* Quitting England at the age of seventeen as an officer of the Indian army, Captain Speke was engaged in four general actions under Sir Colin Campbell. Once being established in the Punjab, he obtained leave on several occasions to indulge his natural taste for field sports, and the collection of specimens of the animals of Tibet, the Himalyas, and Upper India. In those remote and snowy mountains he made himself a geographer, and with a simple compass and watch plotted out tracks for the benefit of future explorers. In 1854, obtaining three years' furlough, he started with a large outfit at his own expense to explore Central Africa, and collect its fauna. Arrived at Aden, General Outram permitted Lieut. Speke to be embodied in the expedition under Captain Burton, destined to explore the Somali country from Berbera. Whilst this expedition was waiting to proceed with the usual annual caravan to Ugadin, Lieut. Speke, with his chief's permission, entered the Somali country as far as Ras Kori, and crossed the coast range into the interior plateau ground. In the space of six months he constructed a sketch plan of those tracts, and made large collections of their flora and fauna. After his return to Aden, he again started alone for the Somali coast at Karum, purchased camels, and proceeded to Berbera, the rendezvous of Burton's party. When the British officers had there established themselves, their camp, as is recorded in your Journal, was attacked by the Somalis, who, seizing all the stores, killed Captain Stroyan, wounded Captains Burton and Herne, and wounded and captured Speke. But escaping, as he says, miraculously, he rejoined Burton and the survivors, and returned to Aden.

Aided by the late Colonel Hamerton, our meritorious Consul at Zanzibar, and by Seyd Majid, the second son of the Imaum of Muscat, now the Prince of Zanzibar, the travellers made an experimental journey from that place on the coast to Fuga in the mountain country of Usambara. In their last and great expedition they again proceeded from Zanzibar. Their party consisted of twelve Beloochees furnished by the kindness of the Sultan, some negroes who had been slaves, and asses for the transport of goods and for riding. Passing over the delta and low hilly country called M'rima, they entered the mountainous coast range at about 120 miles from the coast. This range, which rises to a maximum altitude of 6,000 feet, with a width of about 90 miles, is chiefly composed of sandstone and crystalline rocks, the true character of which will be ascertained when Captain Burton's specimens arrive.

Descending from the coast range to the great interior plateau land, at a lower level, and travelling over some poor lands, they reached a rich country in which knolls or bosses of granite and basalt rise up like rocks in an ocean. This country is exclusively peopled by negroes, none of whom are Mahomedans, as are the Somalis and trading Arabs of the coast.

Like the Negroes described by Livingstone, they have no special religion, trusting solely to good and evil spirits. Such of them as have sultans are on the whole peaceable, fire-arms being rare among them. Their country produces cotton, tobacco, maize, sweet potatoes, a great variety of pulses, manioc, yams, plantains, and melons: they manufacture iron, cotton fabrics, have abundance of cows and goats, and live in comparative comfort.

From Kazé, in Unyanyembé, a spot where the Arab traders have established a sort of mart, and where articles from the coast are bartered for ivory and slaves, the travellers moved westerly until they reached the long inland mass of water trending from S. to N., which has been styled Uniamesi and Ujiji, but the real name of which is Tanganyika.

This lake was found to be 1,800 feet only above the sea, or about half the average height of the plateau land west of the coast range. It has a length of about 300 and a breadth of from 30 to 40 miles.

This great internal mass of water was determined to be an insulated depression into which streams flow on all sides. It was crossed by Speke in the centre, and navigated conjointly with Burton to near its northern end, where it is subtended by mountains which were estimated to have a height of from 6,000 to 7,000 feet

within the range of the eye.* Its waters are perfectly fresh and peculiarly agreeable to drink, and it abounds in delicious fish, whilst its banks are grazed by red oxen of large size, some of them having stupendously long horns. Oxen are indeed common over nearly all the region examined.

A singular phenomenon of blindness affected for some time both the travellers. Whilst exposed in the arid, hilly coast range, and also in the plateau land, to a fierce and glaring sun, their sight was unaffected; but on descending into the verdant, well watered, and rich lacustrine expanse of Tanganyika their sight was dimmed, and gradually they became almost blind—their recovery being slow and imperfect. It was this calamity alone which diminished the number of astronomical observations made by Captain Speke, who lost no opportunity of fixing the latitude and longitude of numerous positions.

When returned to their chief central station in Unyanyembé, Speke, thriving upon hard field work, left his invalid companion in order to reach the great lake Nyanza, the position of which had been pointed out to him by the Arabs, who asserted that it was much longer and larger than Tanganyika, from which it is separated by about 200 miles. In this journey Captain Speke, accompanied by his faithful Beloochees, passed through the district where the chief iron works of the country are carried on; the native blacksmiths smelting the ore with charcoal.

The great lake Nyanza was found to occupy the position assigned to it by the Arabs, and the E. longitude being very nearly that of Kazé, viz., $32^{\circ} 47'$,† its southern end was fixed at $2^{\circ} 30' S.$ lat. Ascending a hill and looking northwards, the enterprising

* Since this Address was delivered, the British Museum has acquired a curious, large, old Portuguese MS. map of the world, on the Mercator's projection, made by Antonio Sances, in 1623, which shows how much general knowledge of the interior of Africa was possessed at that period by the Portuguese. On this velum map, the author distinctly places one large body of water in the centre of Africa, and in the parallel of Zanzibar. Although all the details are inaccurate, and he makes the Congo flow out of this lake to the West, and another river (representing probably the Zambesi), which is called R. de St. Yurzes, from the same to the S.E., still the general notion of great internal waters is there put forth.

Chevalier Pertz has recently discovered in an old MS. in the Royal Library at Berlin that, even in the year 1291, two Genoese navigators, Teodosio Doria and Ugolino Vivaldi, sailed for a certain distance down the West Coast of Africa. Their ships were called *Sant' Antonio* and *Allegranza*, and the last-mentioned name has, indeed, remained attached to the most northern of the Canary Islands. It has been erroneously stated in some journals that these Genoese navigators sailed round the Cape of Good Hope.—June 20, 1859.

† Lunar observations were made at this station.

traveller could discern nothing beyond the islands termed Ukerewe, but a vast interior sheet of water, which, according to those Arabs, whose information had hitherto proved correct, extended northwards for upwards of 300 miles. Captain Speke, who estimates the breadth of this internal sea at 90 miles near its southern end, further ascertained that it is fed not only by streams flowing from the mountains which separate it from Lake Tanganyika, but also by other streams, many of which, meandering in the lower plateau to the west of the lake, constitute, like the internal rivers described by Livingstone, a watery network which when supersaturated by the rains burst and overflow the country.

Seeing that this vast sheet of water extends due northwards, ascertaining by his thermometer that it was nearly 4,000 feet above the sea, and knowing that its meridian was nearly that of the main course of the White Nile, Captain Speke naturally concludes that his Nyanza may be the chief source of that mighty stream on the origin of which speculation has been so rife. This view seems to coincide with the theoretical speculation laid before this Society by myself in preceding years, and is in accordance with the data worked out by Livingstone, of a great interior watery plateau subtended on its flanks by higher lands, and from which interior plateau the waters escape to the sea by favouring depressions.

The physical configuration of the land to the east of the great Nyanza Lake is indeed strongly in favour of this view. On that side, and at a distance of about 200 miles from its banks, the eastern coast range of Africa rises from 6000 feet in the latitude of Zanzibar (where it was passed by our travellers) into a lofty range or cluster, of which Kilimanjaro forms the southern and Kenia a northern peak.

If the assertion of Rebmann and Krapf be accepted, that perpetual snow lies on those mountains, though the able critical essay of Cooley* had induced me to suppose that these missionaries might have been somewhat misled, the summits of these mountains must have an altitude of upwards of 18,000 feet. At all events it is granted that they are the highest points of this coast range. Now, whilst streams descending from the western flank of Kenia (Kilimanjaro is too far to the south) may probably be feeders of the great Nyanza Lake, which occupies a long lateral north and south depression in the

* See Cooley's 'Inner Africa Laid Open,' p. 126.

plateau on the west, we know from its meridian as now fixed, that the direction of this fresh-water sea points directly to Garbo, the spot in latitude 3° north reached by M. Ulivi, as related by Brun-Rollet, a Sardinian, who had established a trading post at Belenia in latitude $4^{\circ} 50'$ north, on the White Nile in 1851. The north and south direction of the Nyanza, which Speke believes to reach from south latitude $2\frac{1}{2}^{\circ}$ to $3^{\circ} 30'$ north latitude, brings us in fact beyond the Garbo of Ulivi and Brun-Rollet.*

The variations which occur in the height of the waters at different seasons, in the interior plateau-country surrounding the great lake, were strikingly described to Captain Speke by the Arabs, when they assured him that at one season of the year the water lilies were so abundant as to enable the traveller to pass over a wide river by treading on their broad and thick floating leaves, showing how flat the country must be, and how sluggish are the streams.

Let us hope that when re-invigorated by a year's rest, the undaunted Speke may receive every encouragement to proceed from Zanzibar to his old station, and thence carry out to demonstration the view which he now maintains, that the Lake Nyanza is the main source of the Nile. Considering the vast difficulties which beset the traveller who attempts to penetrate southwards by ascending the Nile, it seems to be preferable that the effort should be made from Zanzibar, where Captain Speke is sure of being heartily supported by the Sultan, and whence, taking men on whom he could rely, he can certainly calculate on reaching the Lake Nyanza in good plight, for that zone of Africa which he has passed through is now ascertained to be occupied by a much more tranquil people than those of the countries north and south of it.

On former occasions I contended that the periodical overflow of the waters from the internal fresh-water lakes was explicable by the fact, that at certain periods of the year, differing of course in different latitudes, the rain-fall of several months would at last so supersaturate the interior plateau-lands and lakes as to produce periodical annual discharges. That the lofty mountains of the coast-range, of which Kenia is the chief peak, may throw off certain feeders of the White Nile, just as the mountains of Abyssinia feed the Blue Nile, must probably be the case; but whilst it may be admitted that little snow may occupy the peaks or summits of

* M. Jomard has analysed and compared the discoveries of M. Brun-Rollet, who gives some information derived from De Angelis, who resided at Belenia in 1851, which is worthy of attention.

Kilimanjaro and Kenia, I am of opinion with the learned Cooley* that the elevation and mass of these mountains are not such as would sustain a vast range of snow and ice, the melting of which would account for the annual rise of the Nile. Even if it be assumed that this is really a snowy chain, the exact periodical rise of the Nile could never be caused by a periodical melting of its snows, since the power of the sun under the Equator is so nearly equable throughout the year, that it must operate in filling the streams which descend from the mountains with pretty much the same amount of water at all seasons. The great phenomenon of the periodic rise of the Nile is, it seems to me, much more satisfactorily explained by the annual overflow of a vast interior watery plateau, which, is, thanks to Captain Speke, ascertained to have an altitude much more than adequate to carry the stream down to Khartum, where the Nile is believed to flow at a height of less than 1500 feet above the sea; and as the river below that point passes through an arid country, and is fed by no lateral streams, it is to the southern, central, and well-watered regions that we must look for the periodic supply.

On consulting Captain Speke respecting the rainy season of that part of the interior of Africa which lies between Ujiji and Unyanyembé, I find that in about east longitude 30° and south latitude 5° the rains commence on the 15th November and end on the 15th May, during which period of six months they fall almost continuously. Farther northward, where the Lake Nyanza lies, the rainy season, in the common order of events, would commence, he supposes, somewhat later, and probably at a time which will account for the periodical rise of the Nile at Cairo on the 18th June. In support of this view, Captain Speke states that the river Malagarazi, which drains the surplus waters from the south-east slope of the mountains between the Lakes Nyanza and Tanganyika, when first crossed by the expedition, was within its banks, but on the 5th June it had quite overflowed them and constituted a stream 100 yards broad, running westwards into the depressed lake of Tanganyika. Now, as according to the Arabs, and other intelligent

* This acute scholar has shown his power as a comparative geographer by a close analysis of the *quæstio tertius* respecting the Nile of the ancients, and shows that the true Nile of Ptolemy was the Blue Nile, which descends from the mountains of Abyssinia. He also shows that the great lakes of the Nile of Ptolemy are at the Equator—a view now confirmed by the researches of Speke. As to Kilimanjaro, he says it is "an insulated mountain in a sea-like plain, and on a fifth scale of the magnitude required for maintaining perpetual snow near the Equator." See also his work 'Inner Africa Laid Open,' in which he explains the existence of a great sea or lake in the interior of Eastern Africa.

men with whom he conversed, the whole region to the northward of the mountain in question, *i.e.* beneath and to the north of the Equator, is an extensive marshy plateau, intersected by some large and innumerable smaller streams, all feeders of Lake Nyanza, we have only to suppose that at the close of the rainy season the great discharge occurs, and we then have in these data strong grounds for believing, that the theory which I ventured to propound to this Society as the best explanation of the overflow of the Zambesi of Livingstone, as well as of the Congo and other African rivers, will also be found to be applicable to the Nile.

In concluding this notice of the labours destined to clear up the problem of the real sources of the Nile, I must express my thanks to Mr. Macqueen for his efforts to collate all the data concerning the ascents of the White Nile from the expedition sent by Mahomed Ali in 1839 to that of Don Angelis, which Brun-Rollet accompanied in 1851, and when the party reached $3^{\circ} 50'$ north latitude, 31° east longitude. Adding to information obtained from natives and Arabs, and citing Lucan and other ancient authors to the same effect, Mr. Macqueen contends that a lofty mountain to the south-east of the cataracts of Garbo, the last station of Brun-Rollet and his companions, which must be Kenia, is the chief feeder of the White Nile, and that the river Tubesi, spoken of by the African King of Bari, is really the Tumbiri heard of by Dr. Krapf.

Now, even if this view be sustained, it seems to me to be quite compatible with the fresh knowledge obtained by Captain Speke, and his inference, that the Nyanza is the chief feeder of the White Nile. For the southern extremity of this great inland lake is but $2\frac{1}{2}$ ° south of the Equator, whilst its western shore is probably not more than 150 miles from the lofty mountain of Kenia. Hence, seeing that Nyanza is about 4000 feet only above the sea, and that the eastern mountains, under the Equator, are much higher, there is every probability that this vast sheet of water may be fed from the east by streams flowing from Kenia, as it is ascertained to be supplied from the south-west and west by other rivers flowing from the mountains, which separate this high sheet of water from the depressed Lake Tanganyika.*

If then it should eventually be proved, that the Lake Nyanza

* Mr. Edw. Henrige informs me that Botero, in his 'Relationi Universali' (Venice, 1640), says that the eastern Nile flows out of a lake 220 miles long, situated under the Equator; and he places the sources of the western branch of that river about S. lat. 9° , close to the sources of the Zaire or Congo, and what may also be intended for the origin of the Zambesi.

contributes its annual surplus waters to the White Nile, so may it then be fairly considered as the main source of the great river; the more so when we see that its southern end is farther to the south, or more remote from the embouchure, than any other portion of the Nilotie water-parting.* On the other hand, the high mountains which flank the great stream on the east, and probably supply it with some of its waters, may by other geographers be rather viewed as the main and original source. These are the only remaining portions of the great problem which have to be worked out—a problem which it has been the desideratum of all ages to unravel, and one which, according to Lucan, made Julius Cæsar exclaim, that to gain this knowledge he would even abandon the civil war †—a problem which Nero sent his centurions to determine, and which, by the last discovery of Captain Speke, seems certainly now to approach nearly to a satisfactory solution.

Before we descend to the mouth of the Nile, and consider the nature of its delta, I must say that our excellent Swiss correspondent, M. Ziegler, has communicated to us some very interesting further details respecting the people who inhabit the northern declivities of the mountains of Abyssinia, as transmitted by his countryman, M. Werner Munzinger. The historical sketch of the affairs which have taken place of late years in Abyssinia, and particularly in the region bordering on the land of the Bogos, is accompanied by a map and dialects of that curious people. African scholars, as well as geographers, will anxiously look to the publication of the manuscripts of M. Munzinger: his map extends from 15° to 17° north latitude, and east longitude 33° to 38° east of Paris.

Delta of the Nile. Suez Canal.—Whilst Captain Speke was determining the position of the great lake which may prove to be the main source of the Nile, the distinguished Surveyor of the Mediterranean, Captain Spratt, was working out the interesting problem of the effect of the prevailing wave influence on the deposits discharged at the mouth of the greatest of the African streams, and

* Although both White Nile and Blue Nile are fed by many affluents, the remarkable physical feature of the great stream below their junction is that in a course of 1200 miles it is not increased by the addition of any lateral waters. On this feature, as well as on the parallelism of its course to the great N. and S. depression of the Red Sea, on the fertilizing powers of its waters, and on the periodicity of its flood, the reader will do well to consult the article "Mediterranean Sea," Edinburgh Review, vol. cxi., which is from the pen of our accomplished associate Sir Henry Holland.

† "Spes sit mihi certa videndi

Nilacos fontes bellum civile relinquam."—LUCAN, Book 10.

(As quoted by Mr. Macqueen.)

his results have just been published by Her Majesty's Government. Examining the sea shore and sea bottom at different depths along the whole coast of Egypt, and distinguishing the real composition of the detritus brought down by the river from other adjacent deposits, he distinctly shows, that the wave stroke from the west, influenced by the prevailing north-westerly winds, has for ages been impeding the transport of any Nile deposits either to the west, or into the depths of the Mediterranean on the north, but has constantly driven them to the east.

Through this unvarying natural process, Alexandria, which is on the west of the Nile mouth, has been kept free from silt, whilst the deltoid accumulations of the river have in the historic era successively choked up and ruined the harbours of Rosetta and Damietta, and have formed a broader zone in the bay of Pelusium than on any part of the coast. Again, he shows that the prevailing north-westerly wind has produced precisely the same effect upon those dunes and blown sands on the coast lands which, destroying habitations and fertile fields, fill up depressions; all these dunes being derived from those sands which have originally been carried out by the Nile from the interior of Africa, then thrown up on the shore, and afterwards transported eastwards by the prevailing winds.

With the establishment of such data, the result of many soundings at sea and much close observation on land, illustrated in three maps and two plates of sections, Captain Spratt contends, in the spirit of a fair inductive reasoner, that the proposal of M. Lesseps to form a large ship canal in the low countries between Suez and the Bay of Pelusium is wholly unwarranted.—1st. Because that bay of the Mediterranean, into which the canal is to open, is so continuously and regularly silting up, that no amount of dredging could contend against a great local law of nature, and hence that no permanent port could be formed there. 2ndly. That the blown sands drifted from the west would be constantly filling up the canal. 3rdly. That the very incoherent condition of the ground in which the canal has to be cut (being nothing more than the Nilotie sands accumulated in former days) would not sustain a steady body of water, and that all attempts to clear out its unceasing infillings of matter would be impracticable.

In this powerfully-argued paper, Captain Spratt quotes the authority of the French savant, M. Lepiré, who accompanied the First Consul to Egypt in 1800, as a sanction to his conclusions.

With an extended and accurate acquaintance as a maritime surveyor of the deltas which the Danube and various rivers throw out

into the Mediterranean, Captain Spratt proves, that the arguments used by M. Lesseps, as drawn from other localities in favour of his project, are, in fact, directly hostile to it.* Thus, the Malamocco entrance to Venice is to the windward side of the river Po, and therefore freed from its deltoid deposits, just as Alexandria is exempted from those of the Nile. Again, in the Black Sea the deltoid accumulations of the mouth of the Danube are chiefly to the leeward of its mouth, whilst in both these cases powerful currents tend to keep open channels which do not exist in the sluggish water of the bay of Pelusium.

In corroboration of his statements, numerous specimens of sand and mud, brought up by the dredgings of Captain Spratt, are deposited in the Museum of Practical Geology; and his pregnant words which follow may well be commended to the attentive consideration of the French Government and nation, before they get further involved in carrying out the project of a great ship canal:—

"In a gigantic engineering project, involving such an enormous outlay for its construction as well as its annual maintenance, as these facts suggest, it is necessary that the commercial interests invited to speculate in it should thoroughly understand it, so as to form an opinion whether millions of money will not be fruitlessly lost in the depths of the sea, as I must believe will be the case. The experience of the past in the difficulties of engineering against similar hydraulic and physical conditions elsewhere should not be forgotten, and to none are such facts as are here stated of more value and of more real importance than to M. Lesseps and the International Commission. At least, such is the humble opinion of one whose only object is to arrive at the truth of nature's laws, and to suggest to others the consideration of those truths, before blindly engineering against them, and thence to be certain of the cost and results before undertaking a work that will have to contend against so vast an amount of physical difficulties in perpetuity."

These conclusions of Captain Spratt are entirely in unison with the observations of my gallant friend Commander Pim, communicated to our Society at one of our recent meetings, as resulting from a visit to Egypt, which he made when he was the companion of our associate, Mr. Robert Stephenson. That eminent civil engineer has for some time, indeed, arrived at a similar opinion, and has put forth other arguments which seem to me to be as unanswerable as those of Captain Spratt.

The Niger Expedition.—The unfortunate shipwreck of the *Pleiad* on the rocks near Rabba, and the check given to the expedition under

Dr. W. B. Baikie, which left England early in 1857, were alluded to in my last year's Address. I now learn from Mr. D. T. May, R.N., who has returned to England, that less than twenty miles above Rabba the River Niger, or Quorra, divides into several rocky, intricate channels. Consul Beecroft in the *Ethiope*, in 1845, safely navigated the most available of these passages; but the voyagers of 1857 were not so fortunate, and the steamer was totally lost on the rocks. Most of the property was, however, saved, and the neighbouring bank became the head-quarters of the expedition for a whole year. The rocks forming the banks of the river where the shipwreck took place are composed of highly-inclined strata of hard sandstone. All the specimens of this rock which I have examined, whether brought home by Mr. May or sent by the Admiralty, belong to the same light-coloured, hard, sub-crystalline, pinkish sandstone, with very fine flakes of white mica; the successive layers (which are much foliated) being strikingly covered by thin elongated crystals of black tourmaline.* The rock has altogether the appearance of having undergone considerable metamorphosis, and much elevation and disturbance. Geodes of pure white quartz, with large micaceous coatings, also occur. As soon as the party had become somewhat settled, it was determined to make a direct overland communication by Yoruba with Lagos, and Mr. May offering himself for this service, accomplished it satisfactorily, as explained in a notice laid before the Society. In the mean time Lieut. Glover made journeys up the river, visiting Wawa and Busa, and definitely ascertained the impracticability of navigating the river for a few miles beyond the spot of the encampment, a waterfall at Waru being an impassable barrier even for canoes in any season.

Mr. May having waited on the sea-coast, expecting another steamer from England, at last returned to the encampment through Yoruba, and then set out on a more extended journey, with a view to exploring the country, and of establishing postal communication in a line from Lagos to the confluence. Having first travelled to Hadan (the road between Lagos and Hadan being well known and used), he passed eastward, and journeyed for many weeks through the previously unvisited districts of Ife, Ijesha, Igbouma, Yagha, &c., being warmly received, and observing everywhere that the people were quiet, orderly, and industrious; though

* I reiterate the expression of my deep regret (see vol. xxvii. President's Address, p. clxvi.), that no member of this expedition is versed in geology or mineralogy.

these good qualities are here and there broken in upon by marauding or slave-catching armies, sent into the Yoruban country by powerful neighbours. The details of this journey were communicated to the Foreign Office in January last, and will, I presume, soon reach the Society.

Approaching to within fifty or sixty miles of the confluences of the Quorra and Chadda Rivers, Mr. May was compelled to alter his route, and proceed northwards, visiting the ruined famous town Ladi, crossing the Quorra at Shaw, and journeying thence on the north side of the river through Núpe to Rabba.

Lieutenant Glover had during this time also visited the coast by Mr. May's first route, and was now there waiting to pilot up the river the steamer which was at last coming to the relief of the party. Dr. Baikie and the other members of the expedition had been chiefly employed during the year in cultivating a good understanding with their neighbours, reducing their language, &c., whilst the energies of Mr. Barton were amply occupied on the botany of this part of Africa. In October, 1858, just a twelvemonth after the settlement of the expedition at the spot in question, the *Sunbeam* steamer arrived, the whole party were then embarked, and proceeded down the river to Fernando Po, there to recruit the health of the officers and men, and make arrangements for farther exploration. During the twelvemonth's residence in Núpe the most friendly relations were maintained with the king, his brother, and chiefs, and the natives generally; supplies being often received overland from Lagos.

At Fernando Po (November, 1858), a re-organisation having taken place, and the preparations being completed, the party again set out, now in the steamer *Rainbow*, built and sent for the purpose, and endeavoured to re-ascend the river. But it was then found that this vessel, which draws four feet of water, could not ascend the Niger even in the month of January; the waters subsiding until June, when they increase. In consequence, the party was obliged again to return to the sea, and since have set out upon the land-journey from Lagos to Rabba (upon the route opened up by Mr. May), whence it is purposed to proceed with an expedition the friendly objects of which must by this time have made a due impression on the native chiefs, and from which we may anticipate the gain of much knowledge when all the acquisitions of Dr. Baikie and his associates are unfolded.

Livingstone or Zambezi Expedition.—With the exception of the

accounts we received last autumn of the arrival of the great South African explorer in the Zambesi, of his ascent of the river in the little *Ma-Robert* to a great distance above Tete, of his again meeting with his old friends the Makololo, and his subsequent descent of the stream—data with which the public are already well acquainted—we have no news respecting the ulterior progress of this important expedition. If no new geographical discovery should be speedily communicated, let us recollect that the main object of Livingstone, who is now one of Her Majesty's Consuls, is to establish entrepôts for trade and commerce high up the river; and, as a prelude to such arrangements, it was most cheering to us all to learn that his stanch friends, the Makololo, had persevered in waiting for his return in a tract distant from their native land. The charts and maps of the river-banks, executed by my young geological pupil Mr. Thornton, are very creditable performances. Mr. Baines, the artist, has laid before us a clear statement of the difficulties overcome in navigating the river, through rocks and shoals, with little depth of water, and the skill of Livingstone himself has been put to the test in acting, as he terms it, the part of "skipper" in the absence of Commander Bedingfeld. Whatever may be the other products derived from this region of Afriea, there is a fair probability that its splendid hard trees of vast dimensions may afford fine supplies for ship building; and there are persons—including Mr. Lyons M'Leod, lately our Consul at Mozambique—who, looking to the general luxuriance of the vegetation, are of opinion that the territory on the Zambesi may be made a corn-exporting country.

The Seychelles.—In his 'Notes on the Seychelles,' we learn from Mr. Lyons M'Leod that these islands, twenty-nine in number, form an archipelago, which is the most considerable of the dependencies of the island of Mauritius. Extending from $3^{\circ} 33'$ to $5^{\circ} 35'$ south latitude, and from $55^{\circ} 15'$ to $56^{\circ} 10'$ east longitude, they lie at a distance of 915 miles from Mauritius, 566 from Madagascar, and 1470 miles from the continent of India. First discovered by Vasco di Gama during his second voyage to India in 1502, they were explored, in 1742, by Captain Lazare Picault, who took possession of them in the name of the King of France, since which date they have been called by their present name, after the then French Marine Minister. Mahé, the principal island, is about 17 miles long and 4 miles broad: it attains an elevation of 2000 feet in height, and may be seen at a distance of 12 to 15 leagues. The chief mass consists of hard granitic rock, the soil varied and pro-

ductive, watered with numerous rivulets, and being well wooded, the scenery is very picturesque.

On the east side of the island the magnificent bay or roadstead, Port Victoria, about 4 miles deep and 3½ miles wide, could contain from 300 to 400 vessels, while in the harbour five or six sail of the line might be safely moored, with sufficient room for smaller vessels.

Hurricanes and gales of wind are never known there. From 1817 to 1827 a flourishing and lucrative cotton trade was carried on at the Seychelles; though the plant, which is of fine quality, has not yet been placed in competition with *sea-island* quality of Georgia, in the United States.

The sugar-cane grows luxuriantly, and no tobacco is superior to that raised at the Seychelles. Timber, for shipbuilding, furniture, and all domestic purposes, is to be found in abundance. The sperm whale is fished near the Seychelles, and turtle abound. The working population, however, is scant, and during the last year two-thirds of the cloves which are produced by the remains of the spice gardens were left on the ground for want of labour to save them.

"This love of the ocean," says Mr. M'Leod, "might be turned to advantage by encouraging maritime pursuits and commercial relations between these islands, Madagascar, and the whole of the east seaboard of Africa." Specimens of cotton, woods for building purposes, orchilla weed, the *Coco-de-Mer* (found only on these islands), and specimens of the woods may be seen at the rooms of our Society, all brought home by the author of that Memoir from which I have extracted the preceding matter.

The same zealous officer wrote to me in 1857 from Mozambique, advocating the establishment of steam-postal communication between Aden, Natal, and the Cape of Good Hope. From England *via* Aden letters are delivered at Mauritius in 29 days. By the same route, *i. e.* by Aden, a letter might reach Natal in 25 days, and the Cape of Good Hope in 30 days, the steamer calling by the way at Zanzibar and Mozambique. Already it appears that endeavours are making at the Cape to carry out partially the suggestion of Mr. M'Leod by advertisements for tenders to carry on a monthly steam communication between the Cape and Mozambique, and between the former place and Natal steam vessels have plied once a fortnight for more than two years.

So rapid is the demand for advancement in these parts that the

inhabitants of Natal and Mauritius contemplate the establishment of a telegraphic cable between these settlements.

Cotton.—In concluding the observations on Africa and the adjacent countries, I may not inappropriately introduce a short notice of the countries from which we may expect to import cotton. The supply of cotton for our own manufactures is a subject which, in the course of the present year, has been frequently discussed at the meetings of the Society; and when I state that the yearly value of raw cotton consumed by our manufactures in 1857 was no less than 26,000,000*l.*, while the value of the fabrics which we exported, to say nothing of our own immense domestic consumption, amounted fully to 46,000,000*l.*, it is obvious that the importance of the question cannot easily be over-rated.

Besides British India, various other localities, including large tracts of Africa, have been pointed out as suited to the growth of cotton. In fact this plant has such a wide geographical extension, reaching to 35° north and south of the Equator, that it will thrive wherever it is not liable to be cut off by frost. It may be successfully cultivated for exportation wherever the soil is of adequate fertility, wherever the government is strong enough for the protection of life and property, wherever the country is not so crowded with inhabitants as to be itself the best market for its own produce (such being the case in China and the valley of the Ganges)—in short, wherever there exists a cheap transport to a foreign market, and, in so far as the finer qualities are concerned, wherever an adequate share of skill in culture and preparation prevails.

The southern States of the American Union are the parts of the world that have hitherto been found to possess in an eminent degree all the necessary qualifications now enumerated, and hence they are still the chief places from which we derive our finer varieties of the material. They do, in fact, yield 70 parts in 100 of the value of our whole consumption of cotton. Some parts only of our Indian dominions possess a few of the enumerated advantages, and they furnish us with about one-fourth in quantity and one-fifth in value of all that we consume; for the quality in this case, let it be observed, is the poorest of any that is found in our markets, and this simply from the absence of European care, which has never been exercised in the growth, curing, or inland transport of Indian cotton.

Many parts of Africa are, in so far as regards soil and climate, also obviously well adapted to the growth of cotton, which, if not an

indigenous plant, has at all events been long acclimated. The Cotton-Supply Association, formed at Manchester, has not only been made up of those persons who look to a future increase of produce, but has been liberally supported by many philanthropists, who hope that the cultivation of the plant by the natives of Africa may produce a salutary change in putting an end to the slave-trade. One of the active supporters of this institution is Miss Burdett Coutts—a lady eminently distinguished by the kind, judicious, and practical application of her wealth. Among other efforts, this Association has caused a map on a large scale to be published, pointing out with much sagacity in colours the localities which appear, from fertility and means of transport, to be most eligible for the growth of cotton. Already a small supply of fair cotton has been brought to England from the Western Coast of Africa; and it is also asserted that the plant flourishes in abundance in the Fiji Islands.

Although it is not unlikely that Africa may hereafter supply our manufactures with a much larger amount of cotton than at present, the probability is that in such a country other articles better suited to the rude condition of the people will be preferred to it. We have a remarkable instance of this in the supply of the strong and useful oil which we import, the produce of a palm, *Elaeis Guiniensis*, a native of the Western Coast, and which, although the trade is of barely forty years' standing, we imported in 1857, as Mr. John Crawfurd informs me, to the extraordinary value of more than 1,800,000*l.* The same country is, without a doubt, well calculated to produce other oil-yielding vegetables like those we have been of late years receiving from India, such as linseed, rape, mustard, and sesame; all of them plants easily raised when compared with cotton. Already there has been imported from the Western Coast of Africa a still more valuable oil, which goes under the name of shea butter. This is the produce of one of the plants of the natural order Sapotaceæ, as is also the vegetable tallow which we have recently imported from the Malay Islands. The vegetable wax of Japan, of which, as already mentioned, a cargo has been imported within the last three weeks from that empire, is the produce of the *Rhus succedaneum*. I may add, that the voyagers up the Yang-tse-Keang have brought with them specimens of a more valuable article than any of these, insect-wax, the product of an insect which feeds and forms its nidus on a species of ash, *Fraxinus Hanburii*. This was obtained at the mart of Han-Kow, where it

abounds, and is largely used in the manufacture of candles. It will be curious and instructive if we should find that as animal oils become scarce and dear in the progress of society, their place can be supplied from remote and opposite quarters of the world by oils derived from vegetables.

AMERICA.

British North America.—The important results of the exploring expedition under Captain J. Palliser, as communicated by the Colonial Office, and as dwelt upon in awarding the Founder's Gold Medal to that officer, have necessarily given great satisfaction to us, proceeding as they do from men who were especially recommended for this public service to Her Majesty's Government by our Society as well as by the Royal Society.

When Captain Palliser first proposed to make this exploration, one of the main points of interest to geographers was a survey of that part of the Rocky Mountains to the north of the United States boundary which separates the great tracts now named British Columbia from the eastern mass of British North America. Her Majesty's Government deemed it, however, of paramount importance that, in the first instance, the nature of the ground between Lakes Superior and Winnipeg should be accurately surveyed, in order to set at rest all questions of colonization as dependent on the possibility of making practicable routes of communication. For example, whether the Canadas might be brought into profitable communication with the Red River Settlement. The remoter or more western explorations were destined to develop the true nature of the great Prairie region, as watered by the North and South Saskatchewan rivers and their affluents. Collaterally, it was resolved, if possible—and mainly at the instance of this Society—to determine the elevation of the Rocky Mountains in those parallels of latitude, and to point out the passes in them by which communication might be opened out between the vast country occupied by the Hudson Bay Company and the great British seaboard on the Pacific.

In the award of the Patron's Medal to Captain Palliser, allusions have been made to some of the principal results obtained by the researches of the expedition under his orders. But I should not do justice to the leader and his associates, nor to my own feelings, were I not to add a few words of explanation and comment. The first year's labours were necessarily of more importance to the Govern-

ment than they could be to geographers and naturalists. The great object was to determine the capability of establishing an intercourse between the rocky region of Lakes Superior and Winnipeg on the east and the rich prairie countries on the west; and though astronomical, physical, and magnetical observations of considerable importance were made—these countries being to a great extent known before, and their outlines being monotonous—that portion of the survey created but slight interest among us.

Not so when the Rocky Mountains, to which we had specially directed attention, came to be surveyed.* On proceeding from Fort Carlton, Palliser showed his good sense in approaching these mountains from the rich Buffalo prairies midway between the North and South Saskatchewan. An experienced buffalo-hunter himself, he knew that if his men were not well supplied, by no efforts, however well directed, could they succeed. Accordingly, having established a good base, and having secured abundant provisions at Slaughter Creek, he divided his force into three parties. Leading one of these himself across the Kananaski Pass, and returning by the Kutanie Pass in north latitude $49\frac{1}{2}^{\circ}$, and directing Captain Blakiston to explore the still more southerly or Boundary Pass, he sent Dr. Hector to traverse the chain by the Vermilion Pass, and to explore, as a geologist and naturalist, the much loftier mountains into which the chain rises in its trend to the N.N.W. This division of his forces well merited, therefore, the expressions used in the award which has been sanctioned by the Council.

The marked success of the survey accomplished by my young friend Dr. Hector has been peculiarly gratifying to me, inasmuch as I had answered for the capacity he would exhibit in applying his scientific knowledge. Thus, in addition to the determination of latitude, longitude, and the altitude of the mountains and two of their passes, Dr. Hector presents us with a sketch of the physical and geological structure of the chain, with its axis of slaty subcristalline rocks, overlaid by limestones of Devonian and carboniferous age, and flanked on the eastern face by carboniferous sandstone, representing, probably, our own coal-fields, the whole followed by those cretaceous and tertiary deposits which constitute the subsoil of the vast and rich prairies watered by the North and South Saskatchewan and their affluents. His observations on the erratic or drift phenomena are also curious and valuable.

* Dr. Hector had, by directions of his chief, made a successful foray in dog-sledges to the eastern edge of the Rocky Mountains during the winter, in which he procured men and horses.

Prevented by his instructions from descending into the valleys of the Columbia, and there to ascertain practicable routes to the far West, which he will look out for during the present summer, Dr. Hector, though so severely injured by the kick of a horse as to be incapacitated from moving for some days, contrived so to travel northwards as to round the base of the loftiest mountains of the chain before he returned to his winter-quarters in October, after an absence of eighteen weeks from his chief, but laden with valuable geographical and geological knowledge.

In this survey he had the merit of showing that the Vermilion Pass—which is less than 5000 feet high, and therefore 1000 feet lower than any other known pass of the Rocky Mountains—had another decided advantage over them, inasmuch as its western slope, from the summit level of the horse-path, is so little steep that its explorer has no doubt that even a road for carts may be there established. The descents westward, or into the drainage of the Columbia, in the other passes are exceedingly steep; and according to Captain Blakiston, the Kutanie Pass can only have a railroad made along it by the formation of tunnels of several miles in length, and by encountering the difficulty of the steep western gradient of 194 feet per mile.

Another singular natural feature of comparison is, that whilst the Vermilion Pass is less than 5000 feet above the sea, the adjacent mountains on the north rise to near 16,000 feet, showing the great depth of the gorge. On the other hand, in the range beyond the British boundary, to the south, and where no peak (not even that of Frémont) exceeds 13,000 feet, the passes range from 6000 to 7000 feet high.*

* In anticipation of what may hereafter be published in the 'Journal of the Royal Geographical Society,' the reader is referred to the papers presented to Parliament in April, relative to the "Exploration by Captain Palliser of that portion of British North America which lies between the northern branch of the River Saskatchewan and the frontier of the United States, and between the Red River and Rocky Mountains." These printed documents are accompanied by a map, executed by Arrowsmith, from the surveys of the Palliser expedition, together with despatches of the leader and officers under his command, and tables giving the calculations of latitude and longitude by which the positions of places were fixed. An additional paper and map on the southern part of the Rocky Mountains near the American boundary, as prepared by Captain Blakiston, who had quitted the expedition, has very recently been sent to the Society, with the notice from the Secretary of the Colonies that it was not to be looked upon as an official communication until sanctioned by Captain Palliser. These last-mentioned documents, which seem to me to be also ably prepared, have not yet been laid before the Society. The public will soon possess an excellent map by Arrowsmith, in which all the new discoveries are inserted. This map is entitled 'The Provinces of British Columbia, Vancouver Island, with portions of the United States and Hudson Bay Territories.'

I was recently informed by my friend the Right Hon. Edward Ellice that the geographical position of these passes was laid down many years ago upon a MS. map, at the instance of the

Whether one of the heights called Mounts Brown * and Hooker by Mr. Douglas, in honour of our eminent botanical contemporaries, be still higher than the Mount Murchison of Palliser and Hector, it is certain that the chain diminishes rapidly in its trend from this lofty cluster to the north. We know, indeed, that Mackenzie, the first great explorer of those regions, passed through the range in north latitude 56°, at a comparatively lower level. Again, we further know that in proceeding northwards these mountains dwindle into insignificance before they reach the Arctic Ocean.

It will be recollectcd that seven years ago Captain M. H. Syngc of the Royal Engineers, who had been quartered in the Canadas and had made excursions into the adjacent western territories, being deeply imbued with the importance of the original observations of Mackenzie, and attracted by his glowing description, made a warm appeal in favour of the establishment of a line of communication between the Atlantic and Pacific, by passing from Lake Athabasca and the Peace River, thence traversing the Rocky Mountains on the parallel followed by Mackenzie. But that scheme must now, I apprehend, give way before the shorter passages across the mountains in a more southern parallel, and which will, it is hoped, bring a rich prairie country on the east into intercourse with our newly-discovered gold region on the west, as well as with Vancouver Island, the natural resources of which were brought before us by Colonel W. C. Grant.†

Hudson Bay Company, by Mr. David Thompson. I have further learnt from Mr. Arrowsmith, with whom he corresponded, that Mr. Thompson explored the vast regions of the Hudson Bay Company in all directions during twenty-eight years, and projected the construction of a general map of the whole country between Hudson Bay and Lake Superior on the east, and the Pacific on the west! It is indeed much to be regretted that geographers in general were wholly ignorant of such labours and their results. It appears that the last six years of Mr. Thompson's labours were spent on the west side of the Rocky Mountains; it being important to note that his MS. maps were all made from actual survey, corrected by numerous astronomical observations. The largest affluent of the Fraser River in British Columbia, "the Thompson," justly bears the name of this great but little-known geographical explorer; and I therefore trust that there is no foundation for a report which has been spread, that it is proposed to substitute some other appellation for the name of this meritorious man. Beginning his astronomical observations in 1792, Mr. David Thompson was in 1817 appointed the Astronomer of the North American Boundary Commission, and was upwards of eighty years of age when he died in Canada. In the words of Mr. Arrowsmith, "he has left no one behind him who is possessed of a tenth part of his acquaintance with the territories of the Hudson Bay Company, whose directors were duly sensible of his great merits." Whatever may be the fate of that remarkable corporation, we must all admit that it has not only maintained British rights over wide tracts of North America, but has also, in addition to Thompson, produced some of the best geographical explorers of snow-clad Arctic countries, including our medallist Rae; whilst its dealings with the various fur-hunting tribes of Indians have been so equitable as to have maintained the attachment of these poor people, who under such influence have been preserved, instead of falling before the white man as in other parts of America.

* Mount Brown is said to be 16,000 feet high.

† See Journal of the Royal Geographical Society, vol. xxvii.

During the animated discussion which took place among us in the year 1851, Mr. Asa Whitney, of the United States, in proposing his gigantic plan of an inter-oceanic railway, candidly told us that the best line of intercourse between the two oceans would be found within the British territories, and the Palliser expedition has already gone far to demonstrate the truth and value of his suggestion.

With a knowledge of the data acquired by the Palliser expedition, men of ardent minds already contemplate the formation of a railroad, or, if not, of a practicable route, which, traversing British possessions only, shall connect the Atlantic and Pacific Oceans. But when we reflect that the length of this line is above 2000 English miles, and that the greater part of the route on the east will have to traverse wild and unpeopled regions, we cannot rush to hasty conclusions as to the practicability of such an enterprise. Neither ought we to deride a plan which may be ultimately called for when British Columbia and Vancouver Island shall have risen into that importance which they must attain as British colonies. For, it is now ascertained, that the tract lying between the North and South Saskatchewan on the east is one of great fertility, where no intense cold prevails, and that, once through the Rocky Mountains, the traveller enters a country of cedars and rich vegetation, in which even wheat may be grown at heights exceeding 2000 feet above the sea. In the mean time we need, at all events, have no hesitation in assuming that the electric telegraph will, ere long, be at work across British North America.

Believing it to be of the deepest geographical importance, that men who have so distinguished themselves as Palliser and his associates, should not, through a misplaced economy, be held to their original instructions, and be forced to return homewards by retracing their steps from Fort Edmonton, over the previously beaten tracts of North America and the United States, I have had great pleasure in supporting the request of the gallant leader of this expedition and of his associate Dr. Hector, that they might be allowed to wend their way home next summer by again traversing the passes in the Rocky Mountains, and thence to explore the great intervening tracts of British Columbia, including the auriferous region of Frazer River. I am happy to say that Sir Edward B. Lytton readily complied with this request, and that the Palliser expedition is thus about to establish fresh claims upon our approbation.

British Columbia.—Of the vast region to which our Sovereign re-

cently attached the name of British Columbia, geographers have as yet but a scant and very imperfect account. Its first great explorer was my honoured countryman Mackenzie, who, traversing the Rocky Mountains, and reaching the sea after incredible labour, left us an excellent record of his exploits. Since that time agents of the Hudson Bay Company, including its Governor, Sir G. Simpson, have passed through this region; Mr. D. Thompson having partially surveyed it.

In our own volumes we find first, a slight sketch of the Columbia River, or notes made by Dr. Gardner at Vancouver Island and Fort William in the year 1835; then a few observations by Dr. Scouler on the indigenous tribes of the country, distinguishing the fish-eating and well-fed race of the coast from the hunters of the interior. In later years Mr. Douglas, one of the able men brought up by the Hudson Bay Company, and who has recently been appointed Governor of British Columbia, gave us the first sketch of the east side of the island discovered by Vancouver, and also of the Straits of Juan de Fuca; and Colonel Grant described that island much more in detail, giving also an account of its natural history and geological structure.* Then, again, the bold exploring botanist, the late D. Douglas, who fell a victim to his zeal, visited parts of the Rocky Mountains, collecting many fine plants, including the noble *Douglasia* pine, and assigning, as before said, the names of his eminent friends Brown and Hooker to the highest parts of that chain.

With the exception, however, of the description of Mackenzie,† we still remained very ignorant of the greater part of the region now known as British Columbia, and probably would have so remained many years longer, but for the accidental discovery of gold in the bed and on the banks of the Frazer River. So many diggers and speculators soon rushed to the tract, that it became necessary to raise the whole country into the rank of a colony, by separating it altogether from the influence of the Hudson Bay Company.

The printed papers communicated to Parliament in the last year, being accompanied by a map of the gold region, give us a fresh insight into the progress which has already been made in establishing this new colony. In these documents we are pleased to find,

* Whilst this Address is going through the press, a geological description of a part of Vancouver Island by Mr. Bauermann has been transmitted to me. It now appears that the coal before spoken of, like that of New Zealand, is of *tertiary age*.

† Avoch, the property and birthplace of Sir Alexander Mackenzie, who was knighted for his grand explorations in North America, like my own birthplace, Taradale, is in the Black Isle of Ross-shire.

that whilst such clear and statesmanlike instructions have been forwarded by the Secretary for the Colonies, for the guidance of Governor Douglas, the latter has admirably fulfilled his duties in the management of a set of wild and untrammelled gold-diggers, chiefly wanderers from California, from whose lawless deeds and outrages he has taken the best measures to protect the poor Indians.

A despatch to the Colonial Secretary from the Governor's Secretary of the Colony, Mr. F. W. Chesson,* after particularizing the character and habits of the Indians, eloquently and manfully points out the necessity of establishing a thorough British protection of these natives, and some reasonable adjustment of their claims, if the peace of the colony is to be maintained. "The present case (Mr. F. W. Chesson observes) resembles no common instance of white men encroaching on the lands or rights of aborigines for hunting or settlement. It more than realizes the fabulous feuds of Gryphons and Arimaspians, and no ordinary measures can be expected to overcome the difficulty which duty and interest require to be removed, if British Columbia is to become an honourable or advantageous portion of the British dominions." Advocating the adoption of a treaty between the British authorities and the chiefs and their people as legal, just, and pacific as that made by William Penn with the Indians of the eastern sea-bord of America, he rightly adds, that "Nothing short of realizing lawful payment of that which it may be necessary to acquire, and the proper administration of laws framed in a spirit of justice and equality, can really be of service."

Whilst the civil government is thus acting, it will, doubtless, be largely supported in its beneficent scope by the co-operation and aid of the mild influence of religious instruction. In addition to the efforts of the Society for the Propagation of the Gospel, it is, indeed, most gratifying to know that the benevolent Miss Burdett Coutts, who annually distributes aid with boundless liberality in fostering numberless charities and the spread of true religion, has furnished the means for the endowment of the bishopric of British Columbia; so that, thanks to the munificence of this good English-woman, the poor native Indians will find an instructor and protector in Bishop Hale.

Judging from the information already sent home, the gold region of the new colony presents a broad and general resemblance to that of California. Thus, as in the latter the ore has not yet been found

* Parliamentary Papers relating to British Columbia, p. 59.

in the coast-range which bounds the Pacific, but sets on at Fort Yale on the River Frazer, in long. $121\frac{1}{2}^{\circ}$ —extending northwards from 50° to beyond 51° North lat., the gold detritus has been found to ramify largely to the E. and N.E., along the various affluents of the Frazer; the Anderson, Thompson,* and various smaller streams, being found charged with golden débris. Specimens of gold from different parts of the region having been recently presented to the Museum of Practical Geology by Sir Edward Bulwer Lytton, I am led to infer that the original sites or quartz reefs in the slaty rocks, whence all this detrital matter has doubtless been derived, are ridges which lie in the N.N.W. prolongation of the auriferous ridges of California, and are separated from the Rocky Mountains on the east, and from the coast-ridges of the Pacific on the west. At present it is impossible to conjecture, with any approach to accuracy, what may be the probable length of this auriferous region; but there is every reason to think that it may extend far to the N.N.W.; so that the Emperor of Russia may possibly possess in his distant North American dominions a Dorado as well as in his own Ural Mountains. Again, even restricting our inquiry to the auriferous tract of British Columbia, we as yet know little or nothing of its breadth. It has been, indeed, said that gold has been detected on the eastern shore of the great Okanagan Lake, in E. long. 119° , a statement which seems by no means improbable, seeing that the precious metal has been found as far eastward in the United States as Fort Colville on the Columbia.

This brief allusion to the want of knowledge respecting the eastern extension of the gold fields of British Columbia may lead us to hope that Dr. Hector, the geologist and naturalist, who is even now, we hope, about to traverse these tracts, will bring us home accounts which will, to a great extent, dispel our ignorance. He will, at all events, offer to us for the first time a true account of the lithological character of the Rocky Mountains, as distinguished from the auriferous chains to their West; and when his reports are combined with those of Mr. Bauermann, the geologist of the Boundary Survey conducted by Colonel Hawkins, and these are co-ordinated with the data obtained by Palliser in more northern parallels, we shall, indeed, possess a valuable instalment of contributions towards a better

* The Duke of Newcastle, now Colonial Secretary, has just deposited in the Museum of Practical Geology a nugget from the head waters of the Thompson River, weighing nearly 8 oz.—July 12, 1859.

acquaintance with a vast country which is, doubtlessly, destined to play a most important part in the annals of British history.*

Arctic Researches.—It will be remembered that Captain M'Clintock failed to accomplish the middle passage across Baffin Bay in the season of 1857. The *Fox*, therefore, was forced to pass the winter in the pack; afterwards drifting with it helplessly to the south until set free in April of last year. No evil consequences beyond the vexatious loss of an entire year were experienced, the efficiency of the expedition being unimpaired, and after a short stay in the ports of Greenland, where supplies of fresh meat, &c., were obtained, as also from several vessels of the whaling fleet, Captain M'Clintock has gallantly made a successful passage across the middle ice, and entered Pond Bay on the 29th of July. Our latest intelligence is dated from this inlet, whither he had gone for the purpose of investigating some very remarkable reports, which for the last few years have been perseveringly made by the natives to the whaling ships frequenting this quarter.

The statements made by the Esquimaux with respect to fugitive parties of white men in distress, point unequivocally to portions of the crew of the *Erebus* and *Terror*, and their conjecture is corroborated by the fact, that the sledges of these tribes are found to be constructed of oak and mahogany belonging to British ships, and by the existence of other articles in their possession, which could have been derived only from such a source. When last seen, the *Fox* was steering into the very centre of the area from which these reports proceeded, and to which Captain M'Clintock attached the utmost importance. Having cleared up this important point, it was his intention to proceed to Beechey Island to examine into the state of provisions there deposited, and then to make his way southerly towards the bight of the Back or Great Fish River, where it is earnestly hoped the object of his voyage will be attained.

Although it would be premature to express any immediate anxiety respecting the safety of this isolated vessel, commanded as she is by an officer of so much ability and experience, with so many depôts of provision to fall back upon in the event of any casualty occurring previous to her reaching the American continent, yet it cannot be denied that if the close of the present year should have brought us no intelligence, there will be grave cause for solicitude and for

* An instructive map of the region lying immediately to the south of British Columbia, and extending southwards to California Proper, and which has been occupied and settled by the American Government, has been recently published by Mr. Trutch.

regret that the adventurous and skilful M'Clintock should have been left without that support from the west which I have invariably advocated.

Even now we must deplore that the representations made to Her Majesty's Government to induce them to cooperate in this national undertaking by sending or by aiding to send a second vessel to meet the *Fox* through the route of Behring Strait, which was proved by Collinson to be so sure and safe for ships of any size, have not been attended to, and that the *Fox*, equipped and maintained as she is almost entirely at the expense of Lady Franklin, should have been permitted to go forth unaided on her holy errand. This consideration receives additional force from the fact that an Arctic vessel, especially presented by the United States Government, remains unemployed in our own waters; and when, in addition to the primary object of following up the traces of our missing countrymen, she could have been employed in making those magnetical observations on the north coast of the American continent, which the President and Council of the Royal Society have pointed out as being of great importance. Upon this subject it remains only to be remarked, that when Captain M'Clintock sailed from Aberdeen on the 30th of June, 1857, there was still a well-founded hope that the Government would make this concession in the interests of humanity and science, since there was ample time for the fitting out of a second ship before the month of December following, the season of departure for Behring Strait. In anticipation of such assistance, the far-sighted and experienced commander of the *Fox* communicated to Captain Magnire, whose knowledge of the western route rendered him peculiarly fitted to receive such confidence, the views he entertained as to the manner in which two ships, thus converging to the same specified field of search, might act in concert for the common object. It is painful to reflect upon what must be the feeling of disappointment of Captain M'Clintock, when, on reaching near to his goal, he finds none of those preconcerted marks or signals indicative of the approaching succour and cooperation of which he may stand in need!

While the spirit of Arctic enterprise seems almost to have departed from among us, our kindred nation on the opposite side of the Atlantic, entering upon it in the first instance with the kind feeling of succouring our missing countrymen, appear inclined to pursue a path from which so much honour has redounded, and we have received notices of their intention to equip from that country another expedition, having for its object the further examination of Smith

Sound. The settlement of that great physical question, the open Polar Sea, so desired by all geographers, will add a new lustre to the country that sent forth Dr. Kane. Those recent advices have also informed us that Mr. R. Kennicott, of Chicago, has started on a journey overland to the Arctic Ocean. He purposes to proceed to Fort Garry, on the Red River, and thence, with the agents of the Hudson Bay Company, to the valley of the Saskatchewan, the Athabasca, and the Peace Rivers, to the Great Slave Lake. Arriving at the Mackenzie River in the spring of 1860, the summer of that year he will devote to the exploration of the shores of the Arctic Ocean, returning home the following year. It is, therefore, not at all improbable that Captain M'Clintock, should God prosper him, may be welcomed to the shores of British America by a citizen of the United States!*

Progress of Geography in the United States.—At our last Anniversary we justly awarded one of our Gold Medals to Professor Bache, for his highly important coast surveys; and I have now to advert to some other works of our kinsmen of the West that have come under my notice, and which reflect high credit upon them.

The large quarto publications which illustrate the tracks best suited for a railway between the Mississippi and the Pacific have now advanced to the eighth volume. This volume is occupied by a clear and able description, by Mr. Spencer F. Baird, of all the mammals, birds, reptiles, and fishes of those regions, preceded by a lucid introduction, the whole comprising 756 pages of letter-press and 40 plates. This publication and the volumes which preceded it have completely carried out the object of the American statesmen, who directed that their railroad surveys of unknown regions should be illustrated in so complete a manner.

In alluding to this Report, I must repeat what I have said on former occasions, in respect to analogous publications, that the

* The last journals of Captain Fitzjames, the associate of Sir John Franklin, as addressed to Mrs. Coningham, which have just been printed by that lady's husband, Mr. William Coningham, M.P., are deeply interesting. The picture sketched by this gallant officer, of the perfect happiness and good order of the crews under the influence of their beloved commander, revives all our grief for the loss of such noble fellows. There is one expression (p. 8) which, had it been made known when the searching expeditions were sent out in quest of Franklin, might have saved some unnecessary orders of the Admiralty, and much fruitless speculation on the part of geographers, including myself, in favour of tentative efforts being made to the north of Beechey Island. "At dinner to-day (Captain Fitzjames writes) Sir John gave us a pleasant account of his expectation of being able to get through the ice on the coast of America, and his disbelief in the idea that there is open sea to the northward." See also Sir John Richardson's able comments, article 'Polar Regions,' new edition 'Encyclopaedia Britannica.'

Government of the United States has set an example which might certainly be imitated by the mother country. In treating of Australia, I have directed your attention to a proposal of the enlightened Governor of New South Wales, who has endeavoured to rouse the British Government to a sense of the importance of pursuing a similar conduct in our vast colonies.

In the first volume of this remarkable series of ‘Explorations and Surveys for a Railroad Route from the Mississippi to the Pacific,’ the reader will be much struck with the introductory State paper by Mr. Jefferson Davis, then Secretary of War, and addressed to the Speaker of the House of Representatives. The explorers are therein directed to observe and note all those objects and phenomena which have an immediate or remote bearing on the railway, or which might seem to develop the resources, peculiarities, and climate of the country. They were, in fact, ordered to determine all geographical positions, to lay down the topography of the lands, to observe the meteorology, including data for barometric profiles, and two of the party were to determine the direction and intensity of the magnetic force. Other individuals were ordered to make geological surveys and to collect all the plants and animals of the country, as well as to obtain the statistics of the tribes of aborigines. Now that these directions have been well and efficiently worked out by zealous and able men, let us render all honour to the nation which contributes such a great amount of fresh knowledge to the world of science.

Another of these very important documents recently issued by the American Government is the Report on the United States and Mexican Boundary Survey, by Major Emory and his assistants, whose descriptions of the natural appearances of the country are vivid, and its features pictorially delineated; the fossil remains having been collected and partially described by Mr. Parry. Besides many woodcuts representing various landscapes, the work is further embellished by a profusion of lithographic views, as well as by tinted and coloured sketches of the inhabitants. The geological description of the country was prepared by Mr. Arthur Schott, and specimens of the fossil remains having been brought to New York, have been described in this volume by the celebrated palaeontologist Mr. James Hall. The accompanying map, embracing all the region included between the British boundary on the north and 23° north latitude on the south, and between 84° and 126° east longitude, is a great addition to our previous cartography.

In alluding to other works connected with the geography of America, I am glad to have the high authority of my friend Admiral FitzRoy for saying, that one of the most valuable meteorological works which has yet been produced is Lorin Blodget's 'Climatology of the United States.' This large octavo volume, amply illustrated with the best class of maps, is well written, and treats the subject in a masterly and comprehensive manner; the author having strictly followed Humboldt, and largely referred to Dové. In estimating such works as this, and the still more extensive Reports of Espy, we are reminded that they proceed from a country where one language, one system of measurement, one postal arrangement, and one government, coextend over a vast portion of the continent of America.*

If I were now presiding over my brother geologists, I might dilate upon the very important work recently published by Professor Henry Rogers on the 'Geology of Pennsylvania;' for truly the two thick quarto volumes replete with numerous illustrations which have been prepared by this geologist are to be viewed as masterpieces of correct delineation of the structure of his native country. Independently of the intrinsic value of these details to the geologist, miner, and proprietor, the maps and sections have in themselves a most important bearing on physical geography. In tracing the boundaries of the different geological formations, Professor Rogers has shown the intimate connexion between the complicated geological folds or replication and the geographical outlines of the land, and with an ability which proves him to be as good

* Since this Address was read, I have had the satisfaction to receive from our associate, Commander Maury, the second volume of the eighth edition of his 'Explanations and Sailing Directions to accompany his Wind and Current Charts.' This invaluable work, which has justly acquired a world-wide reputation, is another of the striking proofs of the wisdom of the Government of the United States in their encouragement of science.

More recently our medallist, Professor Bache, has obligingly sent to me a list of all the principal American geographical explorations and publications since 1857. In addition to no less than thirty-nine such works, most of them executed by direction of the Government (and of which a list will be given in a subsequent number of the 'Proceedings'), Professor Bache informs me that the following four expeditions are either starting or are already in the field:—Exploration of the San Juan and Colorado Rivers, and of a route from New Mexico to Utah Territory, commanded by Captain John Macomb, Topographical Engineers U. S. A., under the Office of Explorations, War Department.—Exploration of the head Tributaries of the Yellow-stone and Missouri Rivers, and the region in which their sources lie, commanded by Captain W. F. Reynolds, Topographical Engineers U. S. A., under the Office of Explorations, War Department.—Construction of a Military Road from Fort Benton on the Missouri to Fort Walla Walla on the Columbia, commanded by Lieut. John Mullan, U. S. A., under the Office of Explorations, War Department.—Exploration of a route for a Railroad on a new line, across the Great Basin, by Captain J. H. Simpson, Topographical Engineers U. S. A., Utah Expedition, Brigadier-General Albert Johnston, U. S. A., commanding, under the War Department.

a physical geographer as he is an eminent geologist. Liberal as the State of Pennsylvania has been in contributing to the payment of the cost of this elaborate work, I happen to know that, in addition to years of labour, the author has spent some of his private means in bringing it out; and I therefore sincerely hope, for the honour of science, that these volumes may meet with such a sale as will indemnify the writer, who has shown that he can combine such a profusion of details with broad and ingenious philosophical views.

Many are the subjects connected with our science on which, in honour of the United States, I might expatiate. Even whilst I write, the newspapers of Boston announce the proposal to erect a vast Conservatory of Art and Science. Now, whether this idea be carried out in the public gardens of that city, or, as my illustrious friend Professor Agassiz wishes, in the precincts of the adjacent University of Cambridge, with which the names of Everett, Prescott, and other eminent men are associated, a subscription for that noble object, as furnished by thousands of citizens, is the best proof which can be afforded of an enlightened patriotism.*

Central America.—Every year brings us some new information regarding those portions of Central America which seem to offer the best lines for opening a direct communication, either by railroads or canals, between the Atlantic and Pacific Oceans.

The proposed railroad through Honduras has led to surveys across that territory, of very great interest in their actual as well as anticipated results. They will be invaluable to our mapmakers for the new data which they add to our geographical knowledge of a country never before so carefully explored. I have on previous occasions adverted to the mass of valuable information on Central America collected and published by Mr. Squier, the intelligent promoter of the Honduras Interoceanic Railway, which he has since followed up by further details, amongst others a corrected account of the great lake of Yojoa, which has recently been printed in the Proceedings of our Society.

M. Belly, who has obtained from the Governments of Nicaragua and Costa Rica the exclusive privilege and right to open an inter-oceanic communication, by water, through the territories of those

* The great work of Agassiz, to the completion of which that eminent naturalist is devoting his life, and which has been subscribed for in the various States of America to the amount of 60,000*l.* sterling, is an additional proof of the encouragement of science in the United States.

states, has presented to me a copy of the map and sections of his proposed line, which have been laid before the Society. No one can doubt the great interest attached to such an undertaking; it remains, however, to be seen whether it is possible to raise the funds necessary for the completion of so gigantic an enterprise.

South America.—In my Address of 1857 I noticed the preliminary account, all that had then appeared, of Lieutenant Page's 'Exploration and Survey of the Rio de la Plata and its Tributaries,' the full Report of which has now been published at the expense of the Government of the United States.

It forms an important contribution to the geography of South America, and may be well classed with the works of his brother-officers, Herndon, Gibbon, and Gilliss, whose travels were also undertaken under the liberal auspices and at the cost of the Government of the United States. The number of positions which have been for the first time determined and brought together by these officers will leave our mapmakers but little excuse for not correcting in the maps of South America the positions of many towns and places of importance, the true sites of which were never before, perhaps, fixed by observation.

The uninterrupted ascent of the Parana by an American steamer through 13 degrees of latitude as high as 19 degrees, fully corroborates the belief, founded on the old Spanish accounts, that the higher waters of this mighty river are navigable for vessels of quite as large a burthen as are requisite for carrying on a commercial intercourse with the rich provinces of Matto Grosso and Cuyaba, in the very heart of the continent. The observations, however, of Lieutenant Page (like those made in the case of the Yang-tse-Keang in China) show how little reliance is to be placed, even from year to year, on the most careful surveys and soundings of a great river liable to such alterations from periodical floodings. He says—"On comparing the charts of Captain Sullivan, made in 1847, with his own surveys made in 1853 and 1854, it appeared not only that the channels but the appearance of the river was in some places materially changed; islands have been enlarged, others reduced in size, some have disappeared altogether, and their positions as marked upon his chart are now, in some instances, the channel of the river." The track of the *Waterwitch*, at the lower pass of St. Juan (in lat. $30^{\circ} 36'$), passes directly over the position of an island marked on Sullivan's charts. This, as Lieutenant Page observes, proves nothing wrong in his surveys, but it is an interesting fact, showing

the remarkable physical changes constantly produced by the action of the currents. The historical portion of Lieutenant Page's book has been drawn up apparently from the best authorities; the work of one of our former Vice-Presidents, Sir Woodbine Parish, having been amongst others very freely used.

I take this opportunity of recording with satisfaction that we have received a translation of Sir Woodbine Parish's work into Spanish, which has been published at Buenos Ayres, containing some later statistics and additional information respecting the interior provinces of La Plata, and collected by order of the local governments. This translation will add to the value of the work as the best book of reference on those countries.

WEST INDIES.

Phosphatic Rocks of the Anguilla Islands.—A curious and important discovery has been made in the Anguilla Islands, which lie to the north of St. Kitts. The captain of an American trader being becalmed off a rock called "Sombrero," which lies between the British possessions of the Anguillas on the east and Anegada on the west, took away certain specimens of the rock, apparently a bone-breccia. On analysis, these proved to be richly impregnated with phosphate of lime, and a cargo subsequently imported was sold at New York at from 3*l.* 10*s.* to 6*l.* 10*s.* per ton, to renovate the worn out soils of Virginia.

Seeing that 30,000 tons of material removed from a little rock in the wide ocean, which no one had cared to claim, had realized 100,000*l.* in the New York market, the inhabitants of the Anguillas were led to believe that some of the detached rocks or "keys," which lie to the north of the chief island, and at no great distance from Sombrero, might be of the same composition as that rock. They accordingly induced the Governor of St. Kitts, Mr.* Hercules Robinson, to transmit specimens for analysis to London. These specimens having been sent to me by my eminent friend Sir William Hooker have been analysed in the laboratory of the School of Mines, and have been found to contain a notable quantity of phosphate of lime. Hence, when they are properly surveyed and opened out, there is every reason to hope, that these rocky islets will afford a supply of renovating material which may render the

* Now Sir Hercules Robinson.—June 30, 1859.

British farmer, to a great extent, independent of the guano of Peru.*

AUSTRALIA, TASMANIA, AND NEW ZEALAND.

Journey from Moreton Bay to South Australia.—The recent accessions to our knowledge respecting the interior of Australia have been large. Our medallist, Mr. Augustus Gregory, has performed a most remarkable inland journey from Moreton Bay, in which, though unsuccessful in discovering any relics of Leichhardt and his party (the first object of the expedition), he was enabled to define the nature of the interior of the continent from N.E. to S.W., and to reach Adelaide in South Australia. Taking a north-westerly course to the W.N.W. and N.W., he at first found abundance of green grass, though he fears that in seasons of drought few of the water-holes even at a moderate distance from the colony of Moreton Bay, recently named "Queen's-land," are permanent. Tabular sandstone ridges, basaltic peaks, or finely-timbered valleys succeed; but on passing from the River Nare to the N.N.W., it was found that the drought had been of such long continuance, that the whole of the vegetable surface had been swept away by the wind, leaving the country an absolute desert; a few widely-scattered tufts of grass being the only food discoverable for the support of the horses. When on the route to the N.W., which it is known that Leichhardt had intended to follow, Gregory found that high floods had obliterated all tracks of previous explorers, and that the very districts described by Mitchell as covered by a rich vegetation were parched and barren clays! In lat. $24^{\circ} 55'$, long. $146^{\circ} 6'$, a tree was, however, discovered, on which the letter L was cut, indicating very probably that Leichhardt had encamped there.

Continuing the search towards the north-west, Gregory then encountered tremendously heavy rains, and was entangled among numerous and deep channels and boggy gullies, from which the party was only extricated by extraordinary exertions. Such are the frightful vicissitudes abounding in this low region of alternate flood and drought which separates the fertile hilly country of the east coast from the great interior saline desert. In this region they met with occasional small parties of natives, who, as usual, were shy and

* The richest of the specimens is from the rock or key called the Little Scrub. I have sent an account of these keys and a detailed analysis of the specimens, as prepared in the Government School of Mines, to the Royal Agricultural Society for publication in their volume, and have there expressed a hope that a geological surveyor may be sent to the Anguillas to define the extent and relations of these phosphatic rocks.

treacherous, but easily intimidated. Despite of all impediments and much privation, the adventurers pushed on up Thompson River, through a desolate and arid, red-coloured, sandy country, until they reached lat. $23^{\circ} 47'$, when the total cessation of water and grass put an end to all efforts to penetrate farther to the north-west. Compelled most unwillingly to abandon the principal object of their travels by continuing to follow the route probably taken by Leichhardt, Gregory and his companions then turned to the south-west, and ascertained the nature of the country between his remote position and Kennedy's farthest explorations, proceeding through more southern latitudes to reach the settled country of South Australia. The vicissitudes and privations experienced in this route to the south-east are succinctly related, and the outlines of ground, whether stony desert, plains with low ridges of red drift-sand, or sandstone table-lands, are well defined. Advancing by Cooper Creek, and that branch of it named by Sturt, Strzelecki Creek, the travellers finally reached Adelaide.

Respecting the fate of Leichhardt, Mr. A. Gregory thinks it probable that the adventurous traveller, advancing from the Victoria, was lured on to the north-west by favouring thunder-showers, until, on the cessation of the rains, he was arrested in the parched and waterless tract, and, unable to advance or retreat, he perished in the wilderness.* Gregory also informs us, that west of the meridian of 147° E. long. most of the country is unfit for occupation, until the boundary of the colony of South Australia, or 141° E. long., is reached in more southern parallels.

Our medallist is, indeed, well borne out in saying that the results of his expedition are most important with reference to the physical geography of Australia; for when combined with the researches of Sturt, they seem to demonstrate that, whether as examined from the north-east or south, a very large portion indeed of the interior is a worthless saline desert, very little above the level of the sea.

Explorations westward and north-westward from South Australia.—Whilst the last journey of Augustus Gregory has served to confirm the view established by the researches of Sturt, that a vast interior and sterile low region lies to the north of South Australia, and extends to the higher lands which form the western limits of New South Wales on the east, and to the elevations south of Cambridge Gulf on the north, the surveys set on foot at Adelaide

* My friend the Rev. W. C. Clarke has written able notices in the 'Sydney Morning Herald,' in which he differs in opinion from Mr. A. Gregory as to the track followed by Leichhardt.

have demonstrated that a vast tract of well-watered and fertile lands exists to the north-west of that colony.

The efforts of Mr. Herschel Babbage, to which I last year directed your attention, were for some time unsuccessful, owing to the intensely saline condition of the country through which he had to pass, and the difficulty of transporting the apparatus he had ingeniously contrived for the conversion of salt water into fresh. As soon, however, as the heavy teams and drays were dispensed with, and that, joined by Mr. C. Gregory, riding and pack-horses were substituted, this explorer showed how capable he was of defining with precision a considerable portion of new country in which fresh water was reached. Fixing with accuracy the latitude and longitude of several points, he proved the existence of dry land between the masses of water which had been previously united upon our maps under the name of Lake Torrens, while he defined their outlines, distinguishing the northernmost of them by the name of Lake Gregory.

Various other documents and sketch-maps relating to South Australia, which have been forwarded to the Society by Her Majesty's Colonial Secretary, demonstrate what vigorous exertions have been made by other explorers. Thus, Major Warburton defined large tracts of country north of the Gawler Ranges, *i.e.*, between Streaky Bay on the south-west, and the saline country occupied by Lake Gairdner and its adjacent lagoons. The larger part of this country seems to be incapable of supporting colonists, from the want of fresh water, and its prevalent saline character. This active officer also shows that, in many parts, the saline condition of the surface of the country is due to the existence of saliferous rocks beneath, being in this respect analogous to the saline steppes of Russia. Police trooper Geharty, in a separate tour, proved the extension of lands equally sterile with those explored by Major Warburton, which was to be expected, as the tract lies contiguous to the sterile coast-range of Eyre. To the east of Lakes Torrens and Gregory the explorations of Mr. Samuel Parry and Corporal Burt are worthy of notice; the former having determined several points of latitude and longitude, and having given us information respecting the nature of the rocks which occupy the region intermediate between Lake Torrens and Angepena, near the settled parts of the colony.

In the mean time, whilst Mr. Babbage was occupied with his earlier difficulties, and other explorers were determining the real

condition of the saline tracts lying between $32^{\circ} 30'$ and 31° of latitude, an unaided colonist, Mr. M'Dougall Stuart, a former companion of Sturt, passed rapidly beyond all these saline tracts and discovered a large, well-watered, and more elevated region to the north-west. As soon as he ascertained the existence of a permanent supply of fresh water at Andamoka, in south latitude $30\frac{1}{2}^{\circ}$, and had thus secured a retreat, he dashed on to the north and north-west, and soon fell in with numerous gum-creeks, containing streams which flowed from hills ranging from south-east to north-west, and further ascertained that large portions of this region were well grassed and admirably adapted for settlement!

The Governor of South Australia, Sir R. G. Macdonnell, states that the extent of this newly discovered available land amounts to from 1200 to 1800 square miles, and has rightly named the principal waterparting, Stuart Range. His Excellency then adds that the House of Assembly of South Australia had presented an address to him, requesting that the necessary steps should be taken for granting Mr. Stuart a fourteen years' lease of 1500 square miles of the new country.

When we look to the fact, that this explorer had, in the first instance, to get through the southern saline desert between the sea and those interior lands—that he was accompanied by one white man, Foster, and a black man only, and that his compass and watch were his only instruments, we cannot too highly applaud his success, and the Council of this Society has, therefore, well judged in awarding to him a gold watch in honour of such highly valuable discoveries.

Not only did Mr. M'Dougall Stuart define the northern portion of this new and fertile region, but before he returned by a most daring and perilous route to the coast on a meridian far to the west of his line of advance, he also ascertained the southern limit of all the available land.

Nothing which I have read of in Australian travel more strikingly displays the bold and undaunted spirit of adventure, than when Mr. Stuart had reached the southern limit of the fresh-watered country, and ascended a hill near Mount Espy to look southward over the country between him and the sea, he descried nothing but a vast saline desert through which (his provisions being almost exhausted) he must pass. Nothing daunted by that dismal prospect, or the great privations he would have to suffer, he regained the seashore, and travelling along it, once more found

himself on the threshold of colonization. From the 7th of August, when he entered on this desert country, he and his companion Foster had to suffer from hunger and thirst during a fortnight before they reached the settlement of Mr. Gibson, in Streaky Bay. There, both the explorers nearly died, in consequence of the sudden change from a state of want to good diet. Recovering, however, they reached the regularly settled districts of the colony, and were hailed with acclamation in Adelaide.

Now, had the brave M'Dougall Stuart perished like Leichhardt in this last dreadful march to the sea-bord, all notion of a well-watered, rich interior country on the north-west might have been for ages unknown, and his success being ignored, his fate would have checked all further enterprise in that direction.

Whilst it is pleasing to reflect on this happy result, it is also well to know, that the newly discovered fertile lands may be approached from the settled and central portions of the colony without touching upon any part of the sterile saline coast-tract. For, as above said, it has been ascertained that the Lake Torrens of earlier days is divided into at least two bodies of water, and that the mass of land dividing them, which has since been traversed, may serve as the line of route to Stuart Range.

Through the researches of the Government surveyor, Mr. Samuel Parry, and of Corporal Burt, as well as by a return journey of Major Warburton, it has also been ascertained that practicable routes exist from Angepene, on the north-west of the settled country of Adelaide, to the region of Lake Torrens, by which (there being a sufficiency of water-holes) a communication may, it is hoped, be maintained between the settled districts and the new country.

At the same time this discovery of the local waterparting of Stuart Range must not be supposed to clash with the clear determinations of Sturt, that the great mass of the continent directly to the north of Victoria and South Australia is a vast saline depression. In fact the fresh waters descend from the Stuart Range on the north-east into that great sterile depression, and are there absorbed or evaporated. As far, therefore, as our present knowledge goes, we learn that the hilly grounds of Stuart Range, extending from south-east to north-west, constitute a zone of no great width, which pours off its waters both to the north-east and south-west into lower and saline deserts.

Navigation of the Murray, Murrumbidgee, &c.—Whilst such have been the discoveries of travellers overland, an object of paramount im-

portance to Australia has been accomplished by water. The opening of the river Murray to navigation was first accomplished by Captain Francis Cadell, in 1853, as narrated by that enterprising seaman in a letter published in volume xxv. of our Journal. Steadily persevering, with augmented resources and additional steamers, the same individual and other parties have been recently plying on this river from its mouth, near Adelaide, in South Australia, to Albury, a distance of nearly 1800 miles. The channel of the Wakool has also been tested for 50 miles, and Captain Cadell has passed up the Murrumbidgee in a steamboat for 800 miles! Thus, a region in which six years ago no internal traffic existed, has been opened out to water carriage over a distance of 2650 miles, it being estimated that 1150 miles more may eventually be accomplished in the rivers Wakool, Edward, and Darling. The Murray and Murrumbidgee are now ascertained to be navigable from May to the end of December in every year, and for the whole twelve months in those years when more than the average amount of snow and rain falls in the Alpine country in which they take their rise. The Darling, not having its sources in mountains of such altitude, cannot be similarly reckoned upon, though probably it might also be rendered navigable in ordinary seasons if the drift timber, which at present encumbers it, were removed. Referring my readers to the clear and searching Report of a Committee on the navigation of the Murray and its affluents, printed by order of the Legislative Assembly of New South Wales (29th Oct., 1858), as signed by its chairman, that good explorer, Mr. George Macleay, and brought to my notice by my friend Mr. Stuart Donaldson, also one of the Committee,* it is enough for me to cull from that able document the astounding fact, that twenty towns, some of them of considerable size, such as Albury, Deniliquin, Gundagai, Tumut, and Wagga-Wagga, have been called into existence, and that seven more are about to be proclaimed. Already, 71,000 acres of land in this vicinity have been sold; and if, by Artesian borings, fresh water should be obtained in the vast salt-bush countries yet unoccupied, prodigious additional quantities of sheep and cattle may be supported in the adjacent regions.

Descending from the lofty Australian Alps of Strzelecki (Mount Kosciusko), the Murray traverses tracts, some of which, as well as portions of the basin of the Murrumbidgee, have been ascertained by

* Recently Minister of Finance of that colony.

my friend the Rev. J. M. Clarke to be highly auriferous, and in other respects also metalliferous. One of these gold tracts, Adelong, has indeed already been reached within 16 miles by one of the steamers. When we consider that this internal water carriage is already very serviceable for a vast distance to the colony of South Australia, in which the Murray debouches; that higher up the same stream is contiguous to the rich gold-bearing and rapidly rising tracts of the northern parts of Victoria; and that, out of the 1800 miles now proved to be navigable, 1300 lie within the territory of New South Wales, we must rejoice in the reflection that British industry and science have brought into activity a line of intercourse and traffic which must for ever unite in mutual interest the three largest of our Australian colonies.

Again requesting you to consult the well-considered and effective Report of the Committee, appointed by the Legislative Assembly of New South Wales, for the large and statesmanlike views which it embodies, I also specially commend to your notice the clear descriptions given in it by various colonists of the physical condition of the interior, the peculiarities and changes of the rivers, and the very ingenious and effective method employed by Captain Cadell of clearing away those masses of drift timber which formerly impeded navigation. Considerable additional expenditure will, indeed, be required to complete this grand operation of extracting the "snags;" but, looking to the spirit with which the Murray has been cleared for 700 miles, there can be little doubt of the ultimate result, and that in a few years, to use the words of the Committee, "the cheap transmission of the comforts and conveniences heretofore unattainable will give a fixed and civilized character to the society of vast pastoral districts, which has up to the present time been comparatively rude and nomadic."

New Zealand.—Among the good results of the scientific voyage round the world of the Austrian frigate *Nova*, under the command of Commodore Willenstorf, we have now before us a report of Dr. Hochstetter, the geologist of the party, on the coal of New Zealand. Although this coal is of tertiary age, as seen in the districts of Papakura and Drury, in the province of Auckland, it is stated to be abundant, and of such good quality as to be of great importance both for steam navigation and manufacturing purposes.*

As all the geological details will be laid before the Imperial and

* See "New Zealand Gazette," January 1859, for the Report of Dr. Hochstetter communicated by the Governor, Thomas Gore Browne, and transmitted to the Royal Geographical Society by Sir E. B. Lytton.

Royal Geological Institute of Austria by my accomplished friend Dr. Hochstetter as soon as the men of science reach their native land, I rejoiced when I heard that the Emperor Louis Napoleon had given orders that the vessel freighted with such large collections and so much knowledge should not be interfered with by any French cruisers on her way home. I formerly spoke of my anticipations of the successful issue of this scientific voyage, and having recommended these Austrian explorers to the goodwill of Sir W. Denison, the Governor-General of East Australia, it was most satisfactory to learn that his Excellency had been enabled to assist them materially; whilst on their part they have well repaid the kindness shown to them by giving us the first reliable sketch which has been sent home of the true nature of the coal formations of New Zealand.

Tasmania.—Hitherto we have not yet been made sufficiently acquainted with the physical geography and natural history of this large colony. In former years, my valued friend the late Sir John Franklin, when Governor, strove hard to set on foot various scientific inquiries, and of late years the Tasmanian Society has published some good memoirs on various scientific subjects. Recently, however, the Local Government having resolved to have the whole island correctly surveyed by a competent geologist, Her Majesty's Secretary of the Colonies applied to me to recommend a proper person, and Mr. Charles Gould, formerly a distinguished student of the Government School of Mines, has, in consequence, been appointed geological surveyor of this important and little explored region. Whether we look to the correct delineation of the coal deposits which are already known to exist there, to the discovery of gold, or to the general advancement of science, I feel certain that the researches of Mr. C. Gould (son of the eminent ornithologist) will prove of signal value to the colony, and be well appreciated in the mother country.

General Observations on the Australian Colonies.—A project for the establishment of a system of observation in various branches of natural history sciences throughout the British Colonies, and of publishing the same, has been transmitted by the enlightened Governor-General of New South Wales to Her Majesty's Secretary for the Colonies, who has submitted the plan to the consideration of the Council of this Society.*

* The project has been also submitted to the President and Council of the Royal Society, who, as well as the Council of the Royal Geographical Society and myself, have reported favourably upon the scheme.—July 1, 1859.

Being much impressed with the value of the publications on the structure and natural history of the several states of North America, and particularly by a work in 22 volumes on the State of Chile, of which 16 are devoted to the zoology and botany of that country (the portion on geology being still in progress), Sir William Denison has suggested that works on a similar plan, descriptive of the natural history of the British colonial empire, should be set on foot.

Agreeing with Sir W. Denison that such an undertaking is well worthy of the nation whose offshoots have taken root so extensively, I trust that due encouragement will be given to the proposal, and that it may not be checked by the difficulties which at first sight present themselves in bringing it into an effective working state. Sir William feels certain that the different colonies, if called upon, would gladly contribute largely to the work, whilst he looks to the Imperial Government to take upon itself the task of arranging and publishing these contributions upon one uniform system.

The practicability of realizing some such plan as this for our Australian colonies, is illustrated in part by the mode of publication proposed of the geological survey of Trinidad and other West India Islands, to which I have alluded. Works like these, the cost of which is to be divided between the colony and the mother country, must tend to unite by closer bonds all parts of our empire. The practical difficulties will lie first in the selection of persons competent to execute the task, and, next, to organise such a home staff as may efficiently carry the publications through the press.

In reference to Australia, it may indeed be said that parts of the scheme of Sir W. Denison are already advanced. Thus, it is certain that there are few animals or plants of New South Wales which are not known to the eminent naturalists Mr. W. Macleay, and Dr. John Bennett, who reside at Sydney; whilst the geology of large tracts has been accurately laid down since those days when Strzelecki first opened out to us its structure, by Clarke, Jukes, Stuchbury, and others.

Again, from Victoria, now under the enlightened auspices of Sir H. Barkly, we are constantly receiving proofs of the zeal and ability with which Mr. A. Selwyn is describing and laying down accurately upon maps the geological features of that rich auriferous

region; whilst Dr. Mueller, on whose shoulders as an Australian botanist has fallen the mantle of Robert Brown, is continually issuing new works on the plants of the continent, whether those which he collected in tropical or northern Australia, when he was the companion of Gregory, or those of Victoria.

These, then, are excellent materials, ready to be used in the publication of the *Opus Magnum* of our colonial empire which is projected by Sir W. Denison. Let us hope, therefore, that the Old Country may willingly respond to this demand for knowledge made by her children in the colonies. Let us follow the admirable example in this respect set to us by our kinsmen in the United States as well as by our fellow countrymen in Canada, where the publications on geography and geology have already demonstrated how much can be done by the hearty goodwill of the several states of the American Union and by one great colony of the British empire.

Before, however, I quit the consideration of Australia and the adjacent lands, let me remind you of the endeavour which I made as early as the year 1844 (see Address, vol. xiv. p. xcvi) to rouse the attention of the public to the necessity of keeping up the establishment we then possessed at Port Essington, whether as a port of refuge for our merchantmen in peace, or as a roadstead during war, in which a fleet could assemble, to protect the northern and eastern coasts of this vast continent. In the absence of such, it was clear that an enemy might sweep the eastern archipelago on the one side, or attack the slightly protected colony of New South Wales on the other.

In the mean time, although we have long ago abandoned the solitary station of Port Essington on the north coast of Australia—contrary to the entreaty of that excellent naval officer the late Sir Gordon Bremer and his associates now living, Captains Stokes and Drury, as well as in the face of a protest on the part of this Society—not only has no substitute for it been obtained by occupying Cape York or any other station, but we seem to have been heedless of the efforts made in the interim by the French to establish other ports in these seas, and to fill them with a naval force. Thus, whilst the picture of New Caledonia, as discovered by Captain Cook, still hangs in the rooms of the First Lord of our Admiralty, that great island has been taken possession of by the French, and is now their “*Nouvelle Calédonie*.” Now, if our allies (and may

they long continue such) were merely occupying these islands for purposes of trade and commerce, little notice might be taken of the event; but when it is known that they possess in those seas and bays a much larger force of ships of war than Britain, the prospect is, I am bound to say, unsatisfactory as regards the long undefended coast-line of Eastern and Southern Australia.

In vain has your old President insisted on this point for many years, in virtue of the advice of naval officers of experience in those seas, on whose opinion he could rely; but he trusts that a sufficient naval protection of Australia—no less than of the British isles—will now seriously occupy the attention of the Government, the Parliament, and the country.

CONCLUSION.

Entreating your pardon, Gentlemen, for the many imperfections in the preceding sketch of the progress of geographical science during the past year, I will now conclude with a few general remarks connected with the immediate interests of the body over which I have the honour to preside.

Our twenty-eighth volume, edited by Dr. Shaw, shortly to be issued, contains memoirs of high interest, which will fully sustain the reputation we had acquired; and our Proceedings, containing records of the conversations which followed the reading of the various memoirs, have in the mean time put our absent and travelling associates in possession of the zest with which our affairs are carried on.

Whilst a true "*esprit du corps*" has animated us on all occasions, never did it shine forth in a manner so congenial to my feelings as when the mass of the Society rose to bid farewell to my dear friend Livingstone, and at a few days' notice filled to repletion the largest festive hall of this metropolis to wish all success to the undaunted traveller who was about to reexplore the interior of South Africa.

So steadily have our numbers augmented, that although the Society seemed to have reached its climax last year, when I spoke of its having rapidly increased from 600 to nearly 1100 members, I have now the happiness to know that it actually possesses 1200 members, a number far exceeding that of any other scientific body in London.

Looking to the composition of this body, I rejoice to observe that it is made up of men of so influential and yet of such very different classes and walks in life as to ensure a long continuation

of prosperity. In addition to the efforts of geographers, including eminent astronomers and physical philosophers, as well as ardent explorers of distant lands, this Association also flourishes through the good will and hearty support of statesmen, members of both Houses of Parliament, officers of the army and navy, residents in our colonies, and the merchant-traders of this great metropolis. All these, as well as many proprietors and professional gentlemen, take a deep interest in our progress, because they see and feel that in the diffusion of fresh knowledge, and in grappling with questions of physical geography, natural history, and the productions of distant countries, we are continually advancing the material interests of the nation.

It is for such reasons that the Secretaries of the Foreign and Colonial Departments, as well as the Board of Admiralty, never fail to supply us with materials which sustain the interest and character of our evening meetings.

Considering that a larger number of votaries attend these assemblies than those of any other scientific Society, the only drawback which seems to weigh upon us at the present moment is the difficulty of obtaining a meeting-room spacious enough to receive our great numbers. For the last two years the Council of the Royal Society and the Senate of the University of London have kindly permitted us to hold our meetings in the great hall at Burlington House; but if that room and all the beautiful adjacent buildings are to be removed in order to give place to colossal edifices, in which the cultivators of art and science are to have their meeting-places, galleries, and museums, let us confidently hope that a Society so useful and so popular as our own will receive some share of the patronage of the Government.

Let my associates be assured that their President has been quite awake on a subject so important to their interests. Ample care has been taken that the Council should not lose a moment in memorializing the Government and in strongly urging our just claims; but up to the present time no assurance has been obtained that we shall be provided with apartments on the site of Burlington House, and thus be affiliated, as I ardently wished, with the Royal, Chemical, Linnean, and Geological Societies.*

* In issuing this Address I have the satisfaction to announce that the President and Council of the Royal Society have, on my application, consented to continue to the Royal Geographical Society the use of the Great Hall in Burlington House for the meetings of the ensuing Session.—*July 15.*

I must here express my sincere satisfaction, that one of the results to which I have looked with deep interest for many years has been attained since I last addressed you. We have obtained a Royal Charter, which secures to us all those claims upon the State to which our works had already well entitled us; and, as we are now placed in precisely the same public condition as any of the older scientific Societies of the metropolis, it enables me with truth to take leave of my dear friends, as the really good "Fellows of the Royal Geographical Society." The use of my name as your President in this Royal Charter will indeed be to me a source of pleasing reflection through life, whilst it will acquaint those who follow us that I have been bound up with your rise and progress.

Lastly, as the moment has now arrived when, in accordance with our rules, it is my duty to bid you farewell in the capacity of President, let me assure you that I should do so with infinite pain, if the act were to be accompanied by any severance of those ties of reciprocal esteem and affection which I am proud to say have united us in close relationship during many years. Believe me, that in whatever post I may be placed, my heart is too firmly fixed in the prosperity of this Society not to strain every nerve to aid its advancement. I shall, indeed, ever look back with the truest satisfaction to the happy days I have passed among you, and shall never cease to be grateful for the warm support you have invariably afforded me when occupying this chair; thus securing that unanimity and cordiality with which we have all pulled together.

As our meetings are now so numerously attended, and partake so essentially of a popular character, I deem it most fortunate that at this stage of our progress we have been enabled to secure the services of the Earl of Ripon, the son of our first President, who, inheriting the engaging manners and enlightened purposes of his parent, has already shown, both in the Senate and amid large bodies of his countrymen, that he possesses all the qualities which will enable him to maintain our Society in harmonious action. At the same time I also feel confident, that with his attainments and liberal views, he will essentially promote the higher objects of our science.

In handing over to his care the interests of a body so dear to me, you must permit me to say, that as every Roman citizen who had more than once served as Consul was assured that a notice of this

honour would be inscribed upon his monument, so do I hope, that those who survive me will not fail to have engraved on my tomb-stone the record of which I may well be proud—that by the goodwill of my associates I served for twenty-seven years as a Member of their Council, and was during seven of those years the President of the Royal Geographical Society.

PAPERS READ
BEFORE THE
ROYAL GEOGRAPHICAL SOCIETY.

I.—*The Lake Regions of Central Equatorial Africa, with Notices of the Lunar Mountains and the Sources of the White Nile; being the results of an Expedition undertaken under the patronage of Her Majesty's Government and the Royal Geographical Society of London, in the years 1857-1859.* By RICHARD F. BURTON, F.R.G.S., Captain, H.M.'s Indian Army, &c.

"Nor will you require from a man full of occupations, anything of deep research, or the wondrous effects and prerogatives of learning." —BACON, *Essays*.

PREFACE.

SECTION I.

THEY were the foremost European explorers of Eastern Intertropical Africa, that illustrious race, whom Faith and Chivalry impelled, at an infant period of navigation, to dare every danger and to endure every hardship in the sacred causes of Religion and Honour. The Portuguese first touched at Mozambique in 1498. Ere fifteen years had elapsed Makād el Sha'at (Makdishi or Magadodo), Barava, Malindi, Mombasah, Pemba, Zanzibar, Mafiyah (Monfia), Kilwa, and the seaboard southwards to Angoza, Sofala, and De Lagoa Bay, with many places of minor importance, were linked into a chain of forts and factories, of monasteries and mission-houses, extending from Lisbon to Japan, and composed a single province of an empire bounded by a meridian drawn, with a magnificent hand, from the Arctic to the Antarctic Pole.

Portugal obtained possession of a hemisphere. The sun of her prosperity in the East, soon, however, paled : its splendours endured not beyond half a generation. "Till this time" (1515), writes the old historian, "gentlemen had followed the dictates of true glory, esteeming their arms the greatest riches ; thenceforward they so highly applied to trade, that those who had been captains became merchants ; duty became a shame, honour scandal, and reputation a reproach." Corrupted by the lust of lucre and the pride of power, by the allurements of commerce, and by the neglect of arms, the younger generation lost what their worthier sires with immortal renown had won. Do Couto, writing in 1565, thus laments the degeneracy of his age :— "We are beaten on our own ground by the English and the Dutch : wherever they go they are sure to make discoveries ; whereas we remain in ignorance of the value and extent of our own possessions, because we are Portuguese."

The road thus thrown open to a fresher race, the stout-hearted mariners and travellers of England, second to none in spirit and perseverance, began to

visit the shores of Eastern Intertropical Africa, and to gather for themselves the experience which they had been content to borrow from others. Those indeed were the palmy days of exploration when Majesty did not disdain to bid God-speed to an expedition, when holy churchmen chanted, fair women wept, and multitudes joined in prayers for a prosperous return of the adventurers from "isles beyond the sea."

In 1591, Captain, afterwards Sir James, Lancaster* opened to the English the Indian Ocean, and touched at Zanzibar Island; and in 1688-1723, Captain Alexander Hamilton "spent his time trading and travelling;" his experiences, embodied in the 'New Account of the East Indies,'† incited many to follow his example. About a century afterwards Captain Bissell, R.N., commanding H.B.M.'s ships *Leopard* and *Orestes*, first made astronomical observations on the island of Zanzibar.‡ Mr. Salt, in 1809-10, added an account of the Portuguese settlements on the East Coast of Africa in his 'Voyage to Abyssinia.' In 1811-12 Captain Smee and Lieutenant Hardy § were dispatched by the Government of Bombay to collect information at Kilwa and its dependencies and the eastern coast generally. Captain Fairfax Moresby, R.N., in 1822, surveyed the port of Zanzibar, and laid down accurate sailing directions. Captain W. F. W. Owen, R.N., commanding H.B.M.'s ships *Leven* and *Barracouta*, and accompanied by a staff of officers, expended the years between 1822-26 in that laborious hydrography of the East African littoral and harbours, justly termed by a modern author 'Miranda's Tabularum Series.'|| After a blank of twenty years, when the rule of the late Vice-Admiral Sir Charles Malcolm, formerly Superintendent of the Indian Navy, gave impetus to science and discovery among those whom he commanded, the island and mainland of Zanzibar were visited by Lieutenant W. Christopher, I.N., then commanding the H.E.I.C.'s brig of war *Tigris*. This officer, who lost his life doing gallant service at the siege of Multan, after touching at Kilwa, Zanzibar, Mombasah, Brava, Marka, Gulwen, Makdishi, and the Webbe Ganana or Shebayli—which he injudiciously named the "Haines River"—forwarded plans, charts, and political memoranda to the Government of Bombay.

No European, however, had, within historic ages, penetrated the narrow line of coast till 1847, when the Church Missionary Society of Great Britain dispatched two of their servants, the Rev. Dr. Krapf and the Rev. J. Rebmann, to Eastern Intertropical Africa. Charmed by the serene beauty of the scenery, by the apparent salubrity of the climate, and by the friendly reception of the people, the missionaries made Mombasah their station, "resolved," to quote their own words, "in their journeys and intercourse with the natives

* 'First and Second Voyage of the English to India in 1591 and in 1601; begun by Capt. George Raymond, and completed by Capt. James Lancaster.' Kerr's 'General History and Collection of Voyages and Travels,' vol. viii.

† Chap. I. "Giveth a traditional account of the first settling of Europeans at the Cape of Good Hope, with some historical remarks on the maritime countries between the said Cape and Cape Guardafoy, with the inhabited islands of that coast." Pinkerton's 'General Collection of Voyages and Travels,' vol. viii., London, 1811.

‡ 'A Voyage from England to the Red Sea,' by Austin Bissell, R.N., 1798-9, 1806, published at the expense of the East India Company.

§ 'Observations during a Voyage of Research on the East Coast of Africa, from Cape Guardafui, South to the Island of Zanzibar, in the H.C.'s Cruiser *Ternate*, Capt. T. Smee, and *Sylph* Schooner, Lieut. Hardy.' 'Transactions of the Bombay Geographical Soc. from Sept. 1841, to May, 1844.'

|| 'De Azania, Africæ Litore Orientali Commentatio Philologica, scriptis Georgius Bansen, Romanus.' Bonn, 1852. This dissertation was forwarded to me with a courteous note by its author, and proved most useful in lands where bulky classics cannot be carried.

to lay hold of all they should see and hear, and make it known." In 1847, Taita (Dayda), an inland district, was traversed by Dr. Krapf. Mr. Rebmann, in 1848, discovered the much-vexed "snow-mountain," Kilima-Njáro, or Kilima-Ngaó. Shortly afterwards Dr. Krapf explored Fuga, the capital of Kimwere, "tyrannos" of Usumbara. Mr. Rebmann, in 1849, promised by Mamkinga, the principal chief of the Chhaggia country, safe conduct to the far "Unyamwezi Lake," trusted to a plunderer, and lost all means of progress. In 1849 a perilous journey to Ukambani and a voyage to Cape Delgado were accomplished by Dr. Krapf, who, visiting a second time the barbarous regions of Kitui, barely escaped with life. The Rev. J. Erhardt, who joined the "Mombas Mission" in 1846, resided during some months at Tanga, and visited in 1854 Sultan Kimwere of Usumbara.

These appear to be solid services in the cause of discovery. The want of exact geographical data, however, made the learned regard them, not unnaturally, with a jealous eye. Men who had spent their lives in African study could not but hesitate to receive strange and novel knowledge from unknown hands. Mr. W. Desborough Cooley, the lynx-eyed detector of geographical frauds and fallacies, declared the principal explorer to be "poor in facts, but profuse in theory," asserted that his distances—sometimes for days together, 33 miles per diem—are exaggerated, that his bearings are all in disorder, and his etymologies puerile. Finally, the discoverer is determined by him to be "wanting in those habits of mental accuracy, without which active reason is a dangerous faculty." The stigma extended to his fellow-labourers in the field.

Although, however, a sketch of the country to the west and the north-west of Mombasa has been published to the world, the broad lands south of the Pangani River still lay a geographical blank. Mr. Rebmann had made several stout-hearted attempts to reach the Tanganyika or Lake of Ujiji, but none were crowned with success. In 1845 appeared a new explorer, M. Maizan, an Enseigne de Vaisseau in the navy of France, and a distinguished pupil of the École Polytechnique. Before, however, he had penetrated a hundred miles into the interior, he was murdered by an independent chief: the terrible end of this traveller, from whom much might have been expected, will be described in a future page.

Thus the vast area of Central Intertropical Africa was doomed to remain a "terra incognita." Mr. Cooley had determined the position of the "Great Lake" as early as 1835 in a most able paper, the "Memoir on the Geography of N'Yassi,"* which wanted nothing but the solid basis of accurate data. Mr. Macqueen † added notices of the rivers and watersheds of Eastern Africa, derived from Arabs and native travelling traders, and from the exploration of Messrs. Gamitto and Monteiro, two Portuguese officers, who, seeking an "Overland route" across the peninsula, visited the capital of the late Kazembe in 1831-32. Lastly, in 1856 appeared at Gotha ‡ a detailed map by the Rev. Messrs. Erhardt and Rebmann, who, unhappily trustful to the exaggerations and the misapprehensions of Asiatic and African informants, threw into one sea, about equal to the Caspian, the four lakes of Nyanza or Ukerewe, of Tanganyika or Ujiji, of Chama or Moiro Achinto, and of Nyassa or Maravi, thus submerging the territory and the city of the Kazembe. The land, how-

* Published in the "Journal of the Royal Geographical Society," vol. xv., 1845.

† "Notes on the Geography of Central Africa, from the Researches of Livingstone, Monteiro, Graça, and others, by James Macqueen, Esq., F.R.G.S." Read December 10, 1855.

‡ "Skizze einer Karte eines Theils von Ost-u-Central Afrika, &c., &c." Gotha, Justus Perthes, 1856. This map, the joint production of Messrs. Erhardt and Rebmann, was published in translation by the Church Mission Society in Salisbury-square. It will frequently be alluded to in the following pages as the "Mombas Mission Map."

ever, remained unexplored, and the late lamented Rear-Admiral F. W. Beechey, v.P.R.G.S., &c., &c., in his Presidential Address to the Royal Geographical Society of Great Britain,* promised, ex cathedrā, "an immortality of fame" to the fortunate adventurer whom fever and fatigue might spare to drink the mysterious waters of the Lake Region in Central Intertropical Africa.

The numerous troubles which followed the murder of M. Maizan would have deterred an Oriental Prince less prejudiced and inquiring than His Highness the late Sayyid Said of Maskat and Zanzibar from encouraging the exploration of Europeans. Yet this estimable friend of the English nation for years before his decease made repeatedly the most public-spirited offers to H.M.'s Consul, the late Lieut.-Colonel Hamerton. The Sayyid frequently entertained the thought of applying to the Imperial Government for officers selected to map the caravan route of East Africa, and he professed himself willing to assist them with men, money, and the weight of his widely-extended influence. His death was, indeed, a severe blow to the cause of discovery in lands where his name only could command respect.

SECTION II.

Convinced of old that the sources of the White River may profitably be attempted from East Africa, instead of pursuing the problem which has baffled the Priests of the Nile, the Phenicians, the Greeks under the Ptolemies, and the Romans under Cæsar and Nero; anxiously desiring, moreover, to pursue those projects of exploration which had been foiled by official incuriosity, and consequently by the treachery of the Somal at Berberah in 1855, I ventured, after the conclusion of the Crimean campaign, to lay before the Royal Geographical Society of Great Britain a project for opening up the Lake Regions reported to exist in the little-known centre of the peninsula. An Expeditionary Committee, to whom these pages are respectfully inscribed, was pleased to approve of the plan, and, at an interview with Her Majesty's Secretary of State for Foreign Affairs, to obtain from the Right Hon. the Lord Clarendon a grant of 1000*l.* It was understood that a similar sum would be contributed by the Court of Directors of the late Honourable East India Company: unfortunately, however, it was "found wanting."

On the 13th September, 1856, I received from the Court of Directors formal permission, "in compliance with the request of the Royal Geographical Society, to be absent from duty as a regimental officer, whilst employed with an Expedition under the patronage of Her Majesty's Government and the Royal Geographical Society, to be despatched into Equatorial Africa, for a period not exceeding two years, calculated from the date of departure from Bombay, upon the pay and allowances of a lieutenant's rank."

On the 1st of October, 1856, the following instructions were received from the Expeditionary Committee of the Royal Geographical Society. They are published in detail, not only because they may be useful to future explorers in the same path, but also as showing what is expected from the African traveller in this portion of the nineteenth century.

"To Captain RICHARD BURTON.

"London, October 1st, 1856.

"Sir,—The Royal Geographical Society having determined to send an expedition to Eastern Africa for the purposes hereinafter mentioned, and the Council

having recommended you as a fit and proper person to undertake the conduct of the said expedition, you are hereby appointed to the charge of this service.

" As soon as you are in all respects ready, you are to proceed by the overland route to Bombay, where you will report yourself to the Governor, Lord Elphinstone. It is to be hoped that, through the good offices of his Lordship, you may obtain at Bombay the assistance of a person competent to undertake the necessary astronomical and meteorological observations, and willing to accompany the expedition.

" At Bombay you will make such arrangements and provide yourself with such articles as may be necessary for the expedition, in which we have reason to believe you will receive every assistance from the authorities at that place.

" Proceeding from thence to Zanzibar, you will report yourself there to Colonel Hamerton, H.B.M.'s Consul and Agent to the Honourable East India Company. At the same place, or at Mombas, you will also find Mr. Rebmann, a missionary, who will have been prepared for your arrival, and you will immediately place yourself in communication with him and mutually concert operations for your undertaking.

" The Council has obtained the consent of the Church Missionary Society to associate this gentleman with you, and, from his long residence and experience on the coast, it is expected that he will afford important assistance. Although we consider it proper to intrust the conduct of the expedition to you, we, nevertheless, direct you to give great weight to the counsel of Mr. Rebmann, and especially in any matter upon which his local knowledge entitles his opinions to respect.

" The objects of the expedition are geographical, but we see no objection to Mr. Rebmann, while duly assisting you in the execution of the great purposes of the expedition, at the same time pursuing his avocation as a missionary. But the Council nevertheless expect that there will be upon all these points such a mutual co-operation and concert that no delay, danger, or increase of expense shall arise from such avocations of Mr. Rebmann on the one hand, nor any unnecessary rigour or restriction be practised by you on the other.

" The great object of the expedition is to penetrate inland from Kilwa, or some other place on the East Coast of Africa, and make the best of your way to the reputed Lake of Nyassa; to determine the position and limits of that lake; to ascertain the depth and nature of its waters and its tributaries; to explore the country around it; to acquaint yourself with the towns and tribes on its borders; their minerals and other products and commerce. As much native copper is said to be possessed by the natives, you will learn whence it is procured, and, if within your reach, visit the locality and obtain specimens of the mineral *in situ*.

" Having obtained all the information you require in this quarter, you are to proceed northward towards the range of mountains marked upon our maps as containing the probable source of the 'Bahr el Abiad,' which it will be your next great object to discover.

" Before this period of your journey arrives you will, it is hoped, have received replies to your communications from the interior; but should this not be the case, and should you have acquired all the information within your means, you will be at liberty to return to England by descending the Nile, where it is possible you may fall in with the expedition under the Comte d'Escayrac de Lauture, now proceeding up that river to reach its sources; or you may return by the route by which you advanced or otherwise, always having regard to the means at your disposal.

" To procure you a favourable reception upon the coast, and to ensure the protection of the chiefs of the country you will visit, the Imám of Muscat has been communicated with by our Government through Colonel Hamerton, Her Majesty's Consul at Zanzibar; and other diplomatic agents upon the coast,

whether of this or of foreign nations, have been required by their respective Governments to assist you and afford you countenance and support.

" From the limited sum of money appropriated to the purposes of this expedition, it will be necessary to practise the most rigid economy, and a circumstantial and accurate account of every expenditure must be kept and rendered to the Royal Geographical Society.

" The Council have directed 250*l.* (two hundred and fifty pounds) to be placed at your disposal at Bombay for the purpose of providing necessaries for the expedition; and on your arrival at Zanzibar you will be provided with 250*l.* (two hundred and fifty pounds) more for any additions to your outfit that may be required. You will also be authorized to draw upon Colonel Hamerton to the amount of 250*l.* (two hundred and fifty pounds) further, making in all 750*l.* (seven hundred and fifty pounds); the remaining sum of 250*l.* being reserved for your return home, or in case of extreme emergency.

" It is to be most distinctly understood that the Royal Geographical Society will not consider itself responsible for any sums otherwise procured or drawn without its express authority, and that the parties drawing such bills will be themselves liable for them.

" You are to be particular in communicating, as often as possible, all details connected with your progress, the health and condition of the expedition, and your prospects. All your letters are to be addressed to the Secretary of the Royal Geographical Society, under cover to the Secretary of State, Foreign Office, and care should be taken that the Society receive the *first* information of everything.

" You are to keep an itinerary or daily journal of the proceedings of the expedition, in which are to be noted, as far as possible, all the particulars embodied in the memorandum hereunto annexed.

" As the test of an accomplished traveller will always be measured by the accuracy with which his progress is marked by a detailed topography and satisfactory delineation of his positions, you will, no doubt, be jealous of the due performance of this essential part of your duty; but to assist your memory at a time when anxious cares may oppress, or to be useful to any person who may be suddenly called upon to succeed you, the memorandum above-mentioned has been drawn up so as to embody much of what will be required under this head, and to this memorandum the attention of yourself and the persons associated with you in this expedition is particularly directed.

" It is to be clearly understood that all the journals, observations, maps, MSS., and illustrations, of whatever kind, made or recorded upon this expedition, are to be considered the property of the Royal Geographical Society, and forwarded accordingly to its Secretary.

" Throughout the journey all these data should be so kept as to require no explanation, and nothing should be dependent upon memory alone; so that, in the event of any unforeseen incident unhappily depriving the expedition of the services of the individual in charge, his successor may be fully informed of all that has been done.

" Wishing you success in this gallant enterprise, and that you may return in health to this country, covered with honour,

" We are, &c.,

(Signed) { " F. W. BRECHEY, President.
 { " W. H. SYKES, Vice-President.
 { " NORTON SHAW, Secretary."

"Memorandum on Instruments and Observations for the Eastern African Expedition, under Captain RICHARD BURTON."

"For the purpose of determining geographical positions and mapping the country through which the expedition will pass, the following instruments are recommended :—

- 1 Six-inch sextant.
 - 1 Four-inch sextant.
 - 1 Mercurial horizon.
 - 1 Prismatic compass, 0° to 360° .
 - 2 Pocket chronometers.
 - 3 Thermometers to 212° .
 - 3 Ditto smaller, in cylindrical brass cases.
 - 2 Casella's apparatus for measuring heights by the boiling point: 1 for steam and 1 for water.
 - 1 Book, having its pages divided into half-inch squares for mapping.
- Memorandum-books.
- 1 Nautical Almanac, 1856-7-8.
 - 1 Thomson's 'Lunar Tables.'
 - 1 Galton's 'Art of Travel.'
 - 1 'Admiralty Manual.'
 - 1 Tables of Logarithms.
 - 'Hints to Travellers by the Royal Geographical Society.'

Of the nature of the observations which the Council require to be made, the following are selected as being the fewest that, under ordinary circumstances, would be required :—

The latitude of some place on each day's journey, by meridian altitudes of a heavenly body.

The longitude of the same place, either by the actual observation by chronometer or lunar, or by such observations brought up to it by dead reckoning.

The variation of the compass occasionally.

At each place where the Expedition may remain sufficiently long, a good series of lunar distances between the moon and heavenly bodies both east and west of her, should be observed and connected with sights for apparent time, by which the longitude may be determined and the altitudes of the bodies computed, if they are not observed.

As the accuracy of all astronomical observations must depend upon the perfect adjustment of the instruments, the greatest attention must be paid to this subject, and the errors, if any, corrected before the observations are begun. But as in some sextants the index-glass is capable of vertical adjustment only, it will be sufficient to make this adjustment, and to ascertain the index-error of the instrument, by measuring the sun's diameter 'off and on' and applying the correction to all the observations.

There are various methods of mapping a country, most of which have been treated of in Manuals or in the pages of the Society's Journal; but, whichever of these may be adopted, the Society will expect that sufficient data be collected to fix with satisfaction the great features of the survey. The temperature of the air should be noted daily, with the direction of the wind and the state of the weather.

The altitude of the ground may be ascertained by observing accurately the temperature at which pure fresh water boils; and as the Expedition is not provided with barometers or other instruments (except aneroids, which are subject to be damaged) by which their elevation above the sea can be ascertained, this experiment should be frequently made, especially where there is reason to

believe that the ground is becoming more elevated; and especially we should require these observations to be made upon the table-land near the water-parting which separates the rivers flowing into the Indian Ocean from those which run towards the interior, and also at the surface of the great lake of Niassa. Note also the height upon the range giving birth to the Bahr el Abiad, should you be so fortunate as to reach that spot.

Should any wells of depth be visited, the temperature of the water should be carefully ascertained by lowering a thermometer into it and instantly registering it; and the temperature of all lakes, especially that of Niassa, should be determined by the same process, noting the depths, and, of course, the temperature, of any hot springs, if met with.

The height of mountains of great elevation, and more especially of such in a low latitude as are capped with snow, will engage the attention of every traveller. Such as cannot be ascended should be measured trigonometrically by fixing the geographical position of some well-defined peak of the range by bearings from two or more well-selected stations and by observing the altitude of the peak from them, and by finding the elevation of these points by the boiling-point of fresh water, as before-mentioned. In all cases of this nature *astronomical bearing* will be found of the utmost use.

The width of rivers and the dimensions of small lakes may be advantageously measured by sound; but where they are of considerable extent their limits must be determined by observation, either of latitude or of longitude, as the case may be.

Although the Expedition cannot be expected to collect largely objects of natural history, it is highly desirable that you should bring away dried specimens of any very remarkable plants, noting their habitats and the height at which they grow. Specimens may also be easily collected of the land and river or lake shells, as these, as well as the plants, will be the first indications ever obtained of the flora and fauna of this region. Of the larger animals due notice only may be taken.

If possible, some specimens of the rocks or fossil organic remains from the countries traversed should be sent home. In regard to mere rocks, no specimen need exceed the size of a *walnut*; but they must be carefully labelled as to locality, and well wrapped up in two envelopes. Any remains of fossil shells, especially if found at a distance in the interior or at some altitude above the sea, will throw a most important light on the structure of Africa and be most highly prized by all geographers.

(Signed) F. W. BEECHY.

London, October 1st, 1856."

Arrived at Cairo on the 4th of November, 1856, I was joined by Captain J. Hanning Speke, of the 46th regiment, B. N. I., one of my companions at Berberah. Captain Speke, who could not obtain from the Court of Directors formal permission to accompany me, had determined to sacrifice the remainder of his "Sick Leave" to his ardour for African exploration. Arrived at Aden, I met an old and valued friend, Dr. Steinhaeuser, Civil surgeon of that station, who professed himself willing to accompany me. A sound scholar, a good naturalist, and a skilful practitioner, endowed also with even more estimable personal qualities, his presence would have been invaluable in a land of sickness where the people are ever impressed by the name of "medicine-man," and in a virgin field teeming with subjects of scientific interest. The difficulty of obtaining a passage from Aden to Zanzibar during the south-west monsoon, and a severe attack of illness, prevented Dr. Steinhaeuser, though detached upon this duty by the Government of Bombay, from taking part in our adventures. His absence was regretted, and was regretted deeply.

Landing, in company with Captain Speke, on the 23rd of November, 1856, at Bombay, where I was directed to report myself to the Governor, the Right Hon. the Lord Elphinstone, I lost no time in preparing to leave India. The surveying instruments not having been forwarded by the Royal Geographical Society, it was necessary to indent for a supply. The Observatory serjeant, also alluded to in my instructions, proved a "myth" or a "memory." I heard of him in Leadenhall Street; but in the desert halls of the great bungalow at Colaba only a few lank Hindus met my sight. No disposable officer of the Indian navy was then available at Bombay, in consequence of the Persian war. For the purpose of laying down an accurate base from Ras Hafun to Mozambique, Colonel Sykes, F.R.S., the Chairman of the Court of Directors, and one of the Vice-Presidents of the Royal Geographical Society, requested that a small surveying-vessel might be fitted up for that duty by the Government of Bombay. This project had also been defeated by the exigencies of the Expedition to the Gulf.

Under these accumulated disappointments I resolved to model an East African Expedition after my own heart. The kindly consideration of His Excellency Lord Elphinstone, the Governor, and of the Hon. Mr. Lumsden, then Senior Member of Council, Bombay—they but added to a long list of former favours—enabled me to receive permission from the Supreme Government of India to be accompanied by Dr. Steinhaeuser and Captain Speke, on the pay and allowances of their ranks. The active aid of Mr. H. L. Anderson, Secretary to the Government of Bombay, aided me to obtain without delay surveying instruments from the Engineers' stores. The late Captain Powell, then acting Superintendent of the Indian navy, provided me on indent with a well-selected carpenter's chest and other necessities. Colonel M. F. Willoughby, C.B., of the Bombay Artillery and Commanding Ordnance, Bombay, exerted himself, though in the hurry and confusion of a campaign, to supply me in the shortest time with lead run into hardened bullets, and neatly packed in well-seasoned and tightly-screwed deal boxes. By the friendly exertions of Lieutenant-Colonel (then Major) Vincent Eyre, C.B., of the Bengal Artillery, well known by his work "The Military Operations at Cabul," a galvanised and corrugated iron life-boat, divided, for convenience of carriage, into seven sections, each weighing 40 lbs., was procured from the establishment of the ingenious inventor, Mr. Jos. Francis, of New York. The Directors of the Peninsular and Oriental Company allowed, with their usual liberality, this bulky article to be transported free of expense from Southampton to Bombay. Dr. Carter, formerly of the H.E.I.C.'s surveying Brig *Palinurus*, gave instructions for the inspection and collection of copper and copal, supposed to be the most interesting productions of Eastern and Central Africa. Dr. Buist, LL.D., the Secretary of the Geographical Society of Bombay, lent his own mountain barometer, a delicate instrument, by Adie and Son, Edinburgh (No. 39), and forwarded to Zanzibar certain directions for the use of the expedition, which are also, with a view to future utility, here printed in detail.*

* "From G. BUIST, Esq., LL.D., Secretary to the Bombay Geographical Society, to H. L. ANDERSON, Esq., Secretary to Government, Political Department."

"8th December, 1856.

"Sir,—In reference to your letter of the 29th November, No. 5411, of 1856, with accompaniments from the Honourable the Court of Directors and the Royal Geographical Society of London, regarding the expedition into Central Africa, under Captain Burton, I am instructed by the Committee of the Society to reply, that it appears to them that some of the following suggestions might probably be deemed worthy of consideration. They are made in compliance with the wish of the Right Honourable the Governor in Council to meet a merely possible contingency, the Committee not doubting that Captain Burton is fully instructed from higher

The Medical Board, Bombay, recommended that Dr. Steinhæuser should be furnished with medicines, surgical appliances, and a valuable supply of meteor-

authorities, and duly impressed with the responsibilities and duties of the important and honourable enterprise committed to his charge.

" 2. From an application by Captain Burton to the Society, for the use of an aneroid, it appears that he has been disappointed in the receipt of his own mountain barometer, and that his only instruments for measuring elevations by pressure are a couple of boiling-point thermometers.

" 3. As Captain Burton is about to cross a great mountain ridge or table-land, and to endeavour to survey a vast lake or chain of lakes, which appear to absorb the river systems of Central Africa, or form the source of the Nile or some of its branches, questions of altitude become of more than usual interest, and he ought to have a more than ordinarily liberal supply of the means of prosecuting his inquiries. The Committee would, therefore, recommend that he should have with him at least three or four barometers, one to be left at Zanzibar for reference, the rest to be carried on along with him. One he has taken with him from the stores of the Society. That he should have two aneroids, serviceable chiefly from their portability, with two or three mountain simpiesometers, if the instrument is to be had good at the Presidency,—a matter the Committee deem doubtful. The Society has already provided him with one strong, serviceable barometer by Adie; two or three others should be sent after him—the Government supplies of Newman's instruments being abundant. He will probably carry one of each kind along with him, and leave a like number at Zanzibar. Captain Burton is doubtless aware, though too many travellers seem to forget the fact, that the value of pressure observations, when accuracy to within 400 or 500 feet is aimed at, depends mainly on having some trustworthy instrument to refer to at the sea shore, or at some point of known altitude above it, and that this be as near as possible to the elevation to be determined. We have no barometer observations whatever from Zanzibar, the party applied to by the Society, and provided with a barometer in 1847, having failed to carry their wishes into effect.

" 4. The nearest reference point of known pressure is Aden, above a thousand miles away; a distance, under any circumstances, much greater than is desirable, the evil being in the present case aggravated by the prevalence of violent squalls betwixt the Persian Gulf and Cape Guardafui, which sometimes throw down the mercury by half an inch, and thus might create an error in altitude of 500 feet. Captain Burton will on reaching Zanzibar be able to judge of the means of carrying on his supplies, and if the instruments recommended are found more cumbrous than convenient, they need only be left behind.

" 5. In the course of a pilgrimage expected to extend over two years, he will have frequent occasion to communicate with the sea coast, or may not improbably be joined by companions; in either case he will be able to avail himself of the supplies in his rear.

" 6. The Society not being aware of the state of his instruments, or nature of his instructions, beyond what has been communicated to them officially, do not in this matter venture on any further suggestion. Captain Burton will doubtless be impressed with the importance of inquiry into the amount of fall of rain and of evaporation in regions abounding with lakes and rivers, but which, so far as has been ascertained, send no supplies to the ocean. Geological specimens are so cumbrous that they are not to be expected from the interior, but the vessel which carries the travellers to Zanzibar may bring back with her without inconvenience any amount from the sea shore; and it will be eminently interesting to know whether the great limestone formation extending in one vast continuous band from the banks of the Burrnputra to those of the Tagus, and from which Captain Burton forwarded valuable specimens from the Somali country, prevails as far south as the line, and to what distance it extends into the interior. It will be desirable to ascertain whether the upheaved sea beach, such as that which forms the esplanade and is the favourite habitat of the cocoa-nut groves around, prevails along the shores of Africa; and whether, if so, it manifests those signs of a double depression or upheaval which characterise it in most parts of the world. Both facts may in all likelihood be determined by the appearance of the shore, the in-

ological instruments.* The Right Hon. the Governor in Council ordered us a passage from Bombay on board the H.E.I.C.'s sloop-of-war *Elphinstone*, Captain Frushard, I.N., commanding; and thus afforded official introduction where so much depends upon political influence and first appearances. And, lastly, His Excellency Lord Elphinstone honoured me with a letter to Lieutenant-Colonel Hamerton, H.M.'s Consul and H.E.I.C.'s agent at Zanzibar, requesting that officer, whose ascendancy over the Arabs could command anything but an impossibility, to forward the views of the Expedition. Rarely has a traveller to acknowledge so many simultaneous efforts in his behalf. It formed a well-omened contrast to my departure from Aden in 1855.

SECTION III.

On the 3rd of December, 1856, after the brief space of a single week, I was enabled to quit Bombay prepared for penetrating into Central Africa. A pleasant voyage of sixteen days brought me in sight of Zanzibar, my completing place of outfit, where a sad intelligence awaited my arrival. His Highness Sayyid Sa'id, Sultan of Maskat and of Zanzibar, had suddenly died at sea, forty days before the appearance of the *Elphinstone*.

spection of any wells or excavations in the neighbourhood, or by inquiries of the people as to whether, in digging downwards, they have met with blue clay, or tree roots, underneath the beds of gravel, loose or hardened into masses forming the upper surface of the beach. Of the 300,000*l.* worth of commerce betwixt Eastern Africa and Western India—the principal part being that of Zanzibar—gums and gum-resins form an important part, nearly 20,000*l.* worth being exported from Zanzibar. The most valuable of these are copal and gum Animi, the principal supplies being found underground, from which they are washed out by streams and torrents. Like the Dammer of Singapore, and some of the most important gum resins of Australia, they may be regarded as semi-fossils, the produce of forests which have long since disappeared. Our information regarding them is most defective; anything tending to increase or improve it would be highly prized. We should like to know whether the '*Valeris Indica*' which produces it still abounds as a tree, as also what may have been the extent, what the position and circumstances of the extinct forests of which it now constitutes the principal trace. The refuse of these gum resins used frequently to reach Bombay as *poating*, being deemed of no value in commerce. Copal has of late years become so scarce, so much in demand, and so dear, that what was formerly thrown away would probably be considered of value in the market; and there are few of the investigations a traveller can undertake the people of England value so highly as those that can be turned to commercial account. Materially to reduce the price of coach varnish would probably be considered to entitle Captain Burton to a larger share of the gratitude of his countrymen than the measurement of the elevation of the Mountains of the Moon, or the determination of the sources of the Nile. Having thus, in compliance with the wishes of the Right Honourable the Governor in Council, thrown out such suggestions as occurred to them, the Committee direct me again to repeat an expression of their entire confidence in the Expedition, as fully competent to judge of whatever is valuable or attainable.

"I have the honour to be, &c.,

(Signed) "GEO. BUIST, Secretary to the Society.

(True Copy.)

"H. L. ANDERSON, Secretary to Government."

* The following is the list which was recommended by the Secretary of the Medical Board, Bombay: for African exploration it should not be reduced:—2 mountain barometers; 2 Daniell's hygrometers; ½ lb. ether; 2 sets of maximum and minimum self-registering thermometers; 6 common thermometers; 1 thermometer for altitudes.

This was a misfortune. The "Imaum," as he was known in England, had been communicated with by Lieutenant-Colonel Hamerton on the part of H.M.'s Government "to procure" for the travellers "a favourable reception on the coast, and to ensure the protection of the chiefs of the country." Much, moreover, had been expected from the assistance of the Arab prince whose subjects have penetrated into the very heart of Africa. And, as misfortunes seldom come singly, Lieutenant-Colonel Hamerton, to whom I was directed to report myself, prostrated by severe and protracted illness, was incapable of active exertion. Hospitably invited to take up my quarters at the Consulate, I decided upon a brief sojourn on the island of Zanzibar, trusting that the "chapter of accidents," headed by energy and perseverance, would clear for me a way through numerous obstacles.

Already in the month of December the Wanyamwezi porters and idlers were hastening from Zanzibar to reach, as is their custom, their homes in the interior, before the first burst of the rainy monsoon. Lieutenant-Colonel Hamerton, after consulting the Arab authorities, strongly dissuaded his guest from undertaking in that dead season a travel which famine, drought, and the troubles consequent upon the decease of His Highness Sayyid Saïd, rendered as dangerous as it was difficult. His advice was taken. Many final preparations remained. I required a guide, porters, and asses for carriage, together with an outfit of cloth and beads, the latter ever a delicate article of traffic; and without some knowledge of the East African and his language, to have risked an exploration would have been unwise. A preparatory cruize along the coast, and a visit to the Rev. Mr. Rebmann at his station, Rabbai Mpia near Mombasah, were accordingly proposed to and approved of by my kind host.

I was fortunate in securing the assistance of His Highness the young prince Sayyid Majid, Sultan of Zanzibar and the Sawahil, who, following the traditional policy of his family, added to the greatest personal courtesy more substantial tokens of his regard for the British nation. By his orders, Ladha Damha, the collector of customs, a Cutch merchant of a family well known throughout E. Africa, provided me with letters of recommendation and credit to the diwans or chiefs, and to the Banyan brokers of the continental seaboard. Shaykh Said bin Salim, a half-caste Arab, whose father had been governor of Kilwa, and who had himself exercised the same functions at the little port of Saadani, was appointed my Bas Kafilah, or guide. A small Beden, or half-decked vessel, was hired for 30 dollars per mensem,* and the voyage commenced on the 5th of January, 1857, with the *Riami*'s head northwards. The details of my visit to Usumbara, having already appeared before the public,† require no further notice.

Arrived at Mombasah, I waited upon the Rev. Mr. Rebmann, who had been proposed by the Royal Geographical Society as an associate, interpreter, and adviser. In consequence of this recommendation, the Church Mission Society had entrusted me with a permissive letter to their servant; and at an interview in Salisbury Square had insisted upon the propriety of proselytising. A copy of the document had been forwarded direct to the reverend gentleman,

* Whenever, in the following pages, the dollar is alluded to, the German crown, or "Maria Theresa," generally worth 4s. 2d., must be understood.

† The account was sent from Zanzibar Island in June, 1857, and was published in 'Blackwood's Edinburgh Magazine' (in the February, March, and May numbers of 1858). Being unable to correct the proofs, the effect of my eacography has been that the papers in question are in parts utterly unintelligible. The temporary difficulties of making Kilima-ngao in 1857, when the land was suddenly overrun by plunderers, who pushed their way to the very gates of Mombasah, provoked from a German critic an amusing comparison between my *fainéance*, who required an escort of a hundred musketeers, and the energy of the German missionaries, who had traversed the country "weaponed only with an umbrella." However that may be, all the umbrellas in Germany would not have availed them in 1857.

but it was retarded by the usual delays of the post-office communication. Mr. Rebmann, who had at the time been forced to quit his station by the approach of a large plundering party of the murderous Masrai, could not decide upon so serious a step as that of joining an Expedition into Central Africa without time for reflection; he promised, however, to consider the subject at his ease. But it was not fated that the reverend gentleman should accompany me. Lieutenant-Colonel Hamerton, when called upon shortly after my arrival at Zanzibar by Kazi Muhiyy el Din, the most learned of Wasawahili divines, who probably had been commissioned to investigate the real ulterior views of an English exploration, did not hesitate, when required, to take an oath that his guests were unconnected with missionary enterprise. The unhappy political interferences of Dr. Krapf and their regrettable consequences had prepossessed the Arab public, and especially the Sadat or chiefs, against travelling or exploring Europeans. No man objected personally to Mr. Rebmann; but Lieutenant-Colonel Hamerton, having solemnly pledged himself, could neither retract, nor support me had I refused to abide by his engagement. I parted, however, from Mr. Rebmann with regret; he had been as willing as able to enlighten me, and he had never hesitated to throw open his ample stores of knowledge.

Quitting Mombasah on the 24th of January, 1857, I ran down the coast with a fair wind, and, landing at the town of Pangani, visited Fuga in Usumbara for the purpose of becoming familiar with the accidents of travel in this exceptional land. Returning to my starting-point on the 21st of February, and delayed by want of conveyance at that time of pestilence, my companion and I were both attacked simultaneously by the deadly bilious remittent of the coast. An Arab boat appearing on the 5th of March, we set sail, and returned to Zanzibar, where, by the care and kindness of the Consul, and by the sharp practice of Mr. Apothecary Frost, his medical attendant, we both recovered after the normal period of convalescence—six weeks.

SECTION IV.

In early April, 1857, the Masika or Rainy Monsoon broke over the island of Zanzibar—an obstacle to travelling until late in June. This gloomy season soon passed away in the study of Kisawahili, and in preparing the hundred paraphernalia of African travel. With the view of impressing a stamp of publicity upon the Expedition, and of deterring any tampering with the barbarians of the interior, Lieutenant-Colonel Hamerton judged it advisable to apply for the support of the Arab authorities. His Highness Sayyid Majid ordered an escort of eight Baloch mercenaries, afterwards increased on the march to a total of thirteen. These men had imposing beards, and were armed with matchlocks and daggers, swords and shields: their Jemadar or corporal was commanded to follow me wherever I might choose to lead them; and they carried the red flag of His Highness the Sayyid of Zanzibar to the Lakes of Tanganyika and Nyanza. They received, as usual when on field-service, the monthly pay of 10 dollars, instead of the normal 3 dollars from their Prince; the Consul also advanced to each man the sum of 20 dollars for comforts and trading outfit. Ladha Damha engaged fifteen slaves, or rather clients, called the "Sons of Ramji," after the Banyan who had received them in pledge from their parents, and who had kept them because they had not been redeemed. These men carried Tower muskets and German sabres: each had a monthly pay of 5 dollars, half a year's stipend being advanced. Their familiarity with the languages and customs of the people, acquired by frequent travels into the interior, was thus greatly overcharged; muskets and men would have been sold in the bazar for less than a six months' hire. Ramji also leased, at the rate of 5 dollars

each for the whole journey, five ass-drivers—an insufficient number in a country where every animal requires the care of at least one man. An inordinate amount of carriage was necessitated by the bulky and ponderous nature of African specie, cottons, wires, and beads, of which seventy men's loads were expended in eighteen months. Moreover, in the fallacious hope of enjoying sport in E. Africa, we had provided 200 rounds of ammunition for ourselves and our escort. The expense, however, began to weigh heavily upon my infirm finance: to a European the shilling or franc of his native country becomes a rupee in India, and a dollar at Zanzibar. Moreover, besides paying high salaries, I engaged myself, according to custom, to feed the whole body of followers, a kubabah or 1·50 Arab lbs. of grain being the daily ration, together with an occasional Kitoweyo or "kitchen" of meat, ghee or honey. Under these circumstances, I was compelled to leave behind the major part of the *matériel* and the iron boat, which had proved so comfortable a conveyance through the reefs and shoals of the "Green Island." Fire-proof, water-proof, and worm-proof, she never became nail-sick, and the iron proved far superior to the copper formerly employed in such constructions; she was the wonder of the Arabs, who could not sufficiently admire her speed—they called her "*El Sharrádah*," or the runaway—her graceful figure, and the ease with which she was managed; her presence upon the Tanganyika Lake would indeed have been a godsend, sparing us a host of hardships and sufferings.

In early June the violence of the rains abated, and the first travellers of the season took boat from the island to the coast of Zanzibar. Lieutenant-Colonel Hamerton, rousing himself from the lethargy of sickness and debility, offered, with peculiar forethought, to superintend our departure from the littoral, and to lie off Kaole, until assured of our safe passage through the treacherous and blood-thirsty Wazaramo. His Highness the Sayyid having placed at the Consul's disposal the *Artemise* corvette, we went on board, sailed on the 14th of June, 1857, and after three days made "Wale," a bush-grown sandspit off the open roadstead of Kaole.

It had been determined, after much discussion, to land upon the coast, as near as possible to Zanzibar Island. Though I desired to penetrate, as my instructions directed, via Kilwa, into the interior, Lieutenant-Colonel Hamerton was of opinion that the half-caste Arabs and the coast-clans of that country are more hostile to strangers than the people of the northern maritime towns, and that their distance from the seat of Government renders them daring by hope of impunity. Moreover, I had heard sufficient to convince me that the Nyassa or Kilwa Lake is of unimportant dimensions, and altogether distinct from the "Sea of Ujiji," the main object of my exploration. Though these two waters had been run into one by European geographers, no Arab at Zanzibar ever yet confounded them. This consideration mainly determined my entrance into Africa by the great western line of road leading through Unyamwezi, the "Land of the Moon," to the Lake of Many Fables beyond.

Shortly after casting anchor at Wale we were surprised by a visit from Lamha Damha, who, accompanied by Ramji, his brother Bhattia, had torn himself, in compliment to Lieutenant-Colonel Hamerton, from the custom-house of Zanzibar, for the purpose of "starting" the expedition. Fearing an increase of tariff, the Arab merchants, who were proceeding into the interior, cannily hastened to engage their gangs of porters. Said bin Salim, who had preceded us to the continent, in order to secure carriage, had collected, after many desertions and disappointments, only thirty-six return Wanyamwezi: we required about 170. In these straits Lamha Damha proposed to send forward the men engaged—a prudent plan, adopted with success. Laden with cloth, wire, and beads, to the value of 654 dollars, they set out under the guard of two black musketeers, preferring to traverse Uzaramo with this

imperfect defence rather than to incur the danger of accompanying Wazungu, or white men. Our personal property was to be carried on asses. Zanzibar and the mainland harbours were ransacked, and in a few days twenty animals, good and bad, besides the four intended for riding, were fitted for the road with vile Arab pack-saddles made of gunny bags. Of the herd, not one reached Unyamwezi. These severe losses caused me an incalculable amount of toil and trouble. Finally, a second body of twenty-two men, laden like the first, and carrying 359 dollars' worth of goods, was left behind to be forwarded, according to Hindu promise, after ten days. This was the weak point of the arrangement; for it, however, there seemed no remedy. Lieutenant-Colonel Hamerton's rapidly failing health rendered his return to Zanzibar imperative, and I could afford no time for delay. The result was that eleven months elapsed before this necessary supply reached us. Caravan after caravan came up from the coast, every Arab pedlar received his letters, and yet the negligent Bhattias, pretending want of porters as the cause of the delay, maintained an apathetic silence.

The weary labour of accounts and receipts duly concluded, I bade a melancholy farewell to my warm-hearted host, upon whose form and features death was legibly inscribed, and disembarking the *matériel* on the 26th of June, 1857, landed at the little village of Kaole. On the same day Captain Speke marched to Kiungani or Mgude, in the neighbouring plantations, and I followed him on the 27th.

During the first week, creeping at a snail's pace, we heard the booming of the *Artemise*'s evening gun—a signal that refuge was not far. Presently the sounds ceased; we did not, however, divine the cause. Lieutenant-Colonel Hamerton had died on board the corvette, in the harbour of Zanzibar. This event, which happened on the 5th of July, 1857, was not certified to us till eleven months had elapsed, the first letters announcing it having miscarried. With characteristic African futility, the porter despatched with a parcel from the coast, fearing to follow the Expedition into the mountains of Usagara, left this charge with a village Headman, and returned empty-handed whence he came. We were kept in ignorance:—Easterns still hold that

"Though it be honest, it is never good
To bring bad news"—

yet the report spread by a travelling trader was discussed throughout the camp. At length a Baloch, who had probably been deputed to ascertain the effect of the evil tidings upon our minds, undertook the task. We were uncertain what to believe. Said bin Salim, when consulted, appeared to trust the intelligence firmly; but his reasons were somewhat too Oriental to weigh with me. He had found our little store of scarlet broadcloth damaged by rats; this invariably augurs a fatality, and the colour of the stuff indicated the nationality of the deceased.

The Consul's death had nearly proved fatal to the Expedition. Said bin Salim slyly suggested that he had better return to the coast. His pretext was the completion of our carriage. His real object was probably to ascertain whether the untoward event had or had not altered the views of His Highness Sayyid Majid. The Baloch escort, already home-sick, breaking out into open mutiny, left us upon a hill-side declaring themselves to be on their way coastwards; but soon losing heart, all rejoined us at the next station in utter wretchedness. The "Sons of Ramji" privily determined to abandon us as soon as they could find a pretext. As our only resource was to push on at all hazards, we had resolved, in case of a general desertion, to trust ourselves in the hands of our Wanyamwezi porters. The storm, however, blew over—it was the usual *brutum fulmen*.

Lieutenant-Colonel Hamerton's death was sincerely mourned for other than

merely selfish considerations. He had received two strangers, like sons rather than like passing visitors. During the intervals between his long and painful attacks he had exerted himself to his utmost in forwarding their views; in fact, he had made their cause his own. Though aware of his danger, he refused to quit, until compelled by approaching dissolution, the post which he considered it his duty to hold. He was a loss to his country, an excellent linguist and a ripe Oriental scholar, a valuable public servant of the good old Anglo-Indian school; he was a man whose influence over Easterns, based upon their respect for his honest and honourable character, knew no bounds, and at heart a "sad good Christian":—the Heavens be his bed!

SECTION V.

The *personnel* of the E. African expedition when leaving the coast was composed as follows. As domestic servants I had brought from Bombay two Goanese "boys," who received exorbitant wages for doing a little of everything and nothing well; two negro gun-carriers were also engaged at Zanzibar. Said bin Salim, the Ras Kafilah, had, as attendants, four slaves, a boy and an acting wife, whose bulky beauties engrossed his every thought. The Baloch escort numbered thirteen men till one died at Unyanyembe: sent to protect us, they soon deemed it sufficient labour to protect themselves. Twenty negro slaves and twenty-five asses formed a mass of stubborn savagery which proved a severe trial of temper; and finally thirty-six Wanyamwezi return porters, of whom two died of small-pox and two were left behind when unable to advance, carried the outfit. The party did not long continue compact; and the reader may derive some idea of my troubles from the fact that, during our eighteen months of travel, there was not an attendant, from Said bin Salim to the most abject slave, who did not plan, attempt, or carry out desertion. At Unyanyembe, according to custom, the Wanyamwezi porters dispersed, and another gang was engaged to carry our goods into Ujiji. Leaving Msene, I found it necessary to dismiss the "Sons of Ramji," who had proved themselves dangerous by thwarting all my views. We were compelled to trust ourselves, without Arab, Baloch, or slave guard, to the wild Wajiji during our navigation of the Tanganyika Lake, a labour so perilous in native canoes that few merchants care to attempt it. At Ujiji the second gang hired, as is customary at Unyanyembe for the Lake journey, and paid in advance for return, disappeared bodily, and put me to the expense of engaging and paying a third troop. Finally, on our down march to the coast, when we wished to diverge but a few miles from the usual road, our fourth levy of Wanyamwezi porters left us in mass, preferring to sacrifice pay for three months of hard work rather than to march three stages out of the beaten path.

After the usual difficulties of departure and severe trials of patience on the road, we were delayed twelve days by severe sickness at Zungorero, in the head of the Khutu Valley. The mutiny of our Baloch escort lost us some time in the mountains of Usagara, and dissensions between Said bin Salim and one Kidogo, the Mtu Mku or Headman of the "Sons of Ramji," detained us a week at the Ziwa or Pond on the eastern confines of the Ugogo table-land. After many mishaps, such as the desertion of porters, the deaths of all our asses, and the consequent loss and waste of property, sometimes abandoned, at other times pilfered or plundered, we entered Unyanyembe, the head-quarter settlement of the Maskat Arabs in the land of Unyamwezi. Those warm-hearted men received me with peculiar hospitality, most cheering after having experienced the cold and calculating civilities of the African chiefs. We were delayed among them by sore illness, by the general unwillingness of our party to advance, and by the difficulty of hiring porters in the

sowing season,—the Masika or great Rains had set in. During the violence of this monsoon, we traversed the pestiferous region between Unyamwezi and Ujiji. The miasma so affected my companion that he could scarcely see to write, much less to survey or observe, and brought on in my case paraplegia, or a partial paralysis of the extremities, rendering a mandil, or hammock, the only means of advancing. On the 13th of February, 1858, we sighted the Tanganyika, or Lake of Ujiji, a spectacle which consoled us for the incessant worry and all the petty annoyances of the slave-path, together with the extortion, the unruliness, and the insolence of our party: it caused indeed a sensible relief in the grinding care ever present by the imminent prospect of a failure. Yet even this gleam of joy had its dark side: we had been compelled to part with our life-boat, and the only dhow, or sailing craft, upon the lake belonged to an Arab merchant, living at Kasenge, a little island-depot near the western shore. Captain Speke crossed the Tanganyika in vain: he could not prevail upon the proprietor to accompany us, though he offered him the sum of 100*l.* for a fortnight's cruise. We had been electrified by the intelligence collected in different places where collusion was next to impossible, concerning a large river issuing northwards from the Tanganyika. Every thing—wealth, health, and even life—was to be risked for this prize. Accordingly, in two open canoes, or rather hollowed logs, we explored, during a month of African Monsoon Rain, the northern waters of that sweet sea, which saw for the first time the "Union Jack" floating over its dark bosom, and we returned in improved health, despite incessant drenchings and other discomforts far more serious, to Ujiji on the 14th of May, 1858. But we had failed to secure our prize: the mysterious stream, according to all authorities consulted on the spot, enters instead of issuing from the lake.

At Ujiji, finding our resources exhausted by the prodigality or the dishonesty of Said bin Salim, I was compelled by want of supplies to desist from further exploration. And here it was that the over-economy of the viaticum originally granted to the Expedition was severely felt. We had broken through the hard crust of coast, we had escaped the perils of the slave-path, and we were becoming acclimatized in Central Africa, when the want of outfit alone put a stop to our progress. It was vain to linger,—to regret: we had but ten pieces of cloth and a few strings of beads, a quantity barely sufficient for a week's rations, to carry us from Ujiji to Unyanyembe, the nearest depot, distant about 30 marches. Happily the good Snay bin Amir, our Arab agent at Unyanyembe, had bethought himself of forwarding a few necessaries selected from the load of the 22 porters, who were to overtake us in ten days. On this occasion we first received confirmation of Lieutenant-Colonel Hamerton's death, together with letters and papers, then a year and a half old. M. Ladislas Cochet, Consul de France at Zanzibar, had kindly taken our part with the Banyans, who after the fairest promises had neglected us with a provoking pertinacity, and Captain Mansfield, Consul of the United States of America, favoured me with a note, enclosing an edifying tract. Some months afterwards, Captain Rigby, of the Bombay Army, having been appointed Her Majesty's Consul at Zanzibar, reached the island, and, by his influence with the Hindus, changed the aspect of affairs. But this good fortune came too late. We had been compelled to return from Ujiji to Unyanyembe, which we re-entered on the 19th of June, 1858.

After a short delay for repose, and for recovering his sight and hearing, which had suffered severely from an accident, Captain Speke was provided with a gang of porters, and in 45 days he reached and returned from the southern creek of the Nyanza or Ukerewe Basin. The consideration of this reservoir, which topography supports tradition in determining to represent one of the lakes that feed the White or true Nile, is submitted to the calmer judgment of scientific geographers. The reasons for this belief which suggest themselves to my mind will be stated in the following pages.

Deeply impressed with the importance of his discovery, Captain Speke was compelled, through want of supplies, to return direct to Unyanyembe. It was indeed impracticable to penetrate by this line. The lake is still un-navigated; to travel along the south-eastern shores is, according to the universal voice of the Arabs, impossible, on account of the ferocity of the tribes, and in order to skirt the western bank, a large outfit, and perhaps years of obstacles and delays owing to the mutual jealousies of the great despots of the northern kingdoms, are necessary. Yet after Captain Speke's return we again agitated the advisability of remaining in the country until fresh supplies could be procured, for the purpose of visiting the northern kingdoms of Karagwah, Uganda, and Unyoro. The scheme appearing impossible, we applied ourselves to the means of marching upon Kilwa, thus avoiding a return by the same road that led us into the country. But the former project was dismissed from the conviction that we could not depend upon assistance from Zanzibar, so the latter was frustrated by the unmanageable obstinacy of our porters. We wanted resources to bribe them into compliance, and the rapid flight of our leave of absence forbade those long delays which in these regions alone compensate for large expenditure.

On the 26th of September, 1858, the E. African Expedition bade adieu to Unyanyembe, and after a march eventless except in delays and difficulties caused by disease, desertion, drought, and a famine which had desolated the land, it arrived in early February of 1859 at the little maritime village of Konduchi. A "Battela," or Arab sailing craft, sent by Captain Rigby from Zanzibar, enabled Captain Speke and myself, after dismissing the Baloch guard, and losing to our gain the last of the "sons of Ramji," to visit the coast southwards as far as Kilwa Kisiwani, the island where still stand the vestiges of ancient "Quiloa." This cruise had for object the inspection of the unknown Delta of the great Rufiji River, a counterpart of the Zambezi in the south, and a waterway that appears destined to become the high-road of nations into Eastern Africa. Fate, however, again thwarted our schemes. The cholera, which after ravaging the island of Zanzibar had almost depopulated Kilwa, reduced our crew in three days from seven to two, and no man dared to engage himself on board the infected vessel. The river also was in flood, overflowing its banks, and its line appeared marked by heavy purple clouds that discharged a deluge of rain. Convinced that the season for travelling was ended, we turned the head of the Battela northwards, and on the 4th of March, 1859, after a succession of violent squalls and pertinacious calms, we landed once more upon the island of Zanzibar.

SECTION VI.

The little state was at the time of our return in the height of confusion. His Highness Sayyid Suwayni, Sultan of Maskat, seizing the pretext of a tribute owed by his younger brother of Zanzibar, had embarked a host of Bedouin brigands upon five ships and several Arab craft: with this power he was, men believed, preparing a hostile visit to the island. The Baloch stations on the mainland were drained of mercenaries, and 7000 muskets, with an amount of ammunition which rendered the town dangerous, was distributed to slaves and other russians. Dows from Hadramaut brought down armed adventurers, who were in the market to fight for the best pay. The turbulent Harisi chiefs of Zanzibar were terrified into siding with His Highness Sayyid Majid by the interest of Captain Rigby. But the consular representatives of the several Christian powers could not combine in efforts to preserve the peace, and the Harisi, with their thousands of armed retainers, appeared to preserve an armed neutrality, which threatened mischief to the weaker of the rival brothers. Trade was paralysed, the foreign merchants lost heavily, and no less than

eighty native vessels were still expected at the end of the season from Bombay and the north. To complete the confusion, several ships collecting negro "emigrants" and "free labourers," *per fas et nefas*, were reported to Zanzibar by the authorities of the coast.*

After a fortnight of excitement and suspense, during which the wildest rumours flew through the mouths of men, it was officially reported that Her Majesty's steamer *Punjaub*, Captain Fullerton, H.M.'s I.N., commanding, under orders received from the Government of Bombay, had met Sayyid Suwayni off the eastern coast of Arabia, and had persuaded him to return.

Congratulations were exchanged, salutes were fired, the negroes danced and sang for a consecutive week, and with the least delay armed men poured in crowded boats from the island towards their usual stations. But the blow had been struck; the commercial prosperity of Zanzibar could not be retrieved during the brief remaining close of the season; and the strong impression that a renewed attempt would ensure similar disasters at a future time, seemed to be uppermost in every mind. †

Our labours being duly concluded, we now sought the first opportunity of quitting Zanzibar in comfort. His Highness Sayyid Majid had honoured me with an expression of desire that I should remain until the expected hostilities were brought to a close: the report, however, of the success of the *Punjaub* left me at liberty to depart. With grateful heart I took leave of a Prince to whose goodwill I had been mainly indebted for success, and who, at the parting interview, had offered me a passage homeward in one of his own ships of war. Happily, however, at that time a clipper-built barque, the *Dragon of Salem*, Captain M'Farlane commanding, was discharging cargo in the harbour preparatory to setting out with the south-west monsoon for Aden. The Captain consented to take us on board, and on the 22nd of March, 1859, the clove-shrubs and coco-trees of Zanzibar faded from our eyes. After crossing and recrossing three times the tedious Line, about the middle of April, 1859, we found ourselves anchored near the ill-omened black walls of the Aden Crater.

The crisis of our African sufferings had taken place during our voyage upon the Tanganyika Lake; in my case, however, the fever still clung like the shirt of Nessus. Mr. Frost, of Zanzibar, did not hesitate to advise a temporary return to Europe: at Aden his opinion was confirmed by the civil surgeon of the station, who recommended a lengthened period of rest. I bade adieu to the Coal-hole of the East on the 28th of April, 1859, and in due time greeted with becoming heartiness the shores of my native land.

The following pages contain the results of my exploration offered to the reader in a plain and unpretending form: they were written in the tent and under the tree with the objects which they describe in sight; they aim merely at correctly portraying the novel features of the country as they unfolded themselves to a traveller's eyes, and they claim for their defence his mercy and forgiveness under the apology which forms the motto prefixed to these pages.

The period of my exploration from the first landing at, to the final departure from, the Island of Zanzibar was two years and three months. During that time, exclusive of coasting voyages from Mombasa to Kilwa and a visit to Fuga in Usumbara, the E. African expedition covered at least 2700 miles of

* No further allusion will be made in these pages to the system lately introduced by the slavers of civilized Europe; the question is somewhat of too political a nature to be discussed in a work devoted to geography. Yet, it is hoped, no honest man's mental vision can be so obfuscated as to be incapable of discerning the old evil, through its disguise of a new name.

† The attempt, in fact, was renewed shortly after the first failure, but it terminated in the same way.

ground hitherto unvisited by Europeans, navigated the Tanganyika Lake in two of its three main lines, and discovered the great Nyanza or Ukerewe Sea. The total expenditure, including passage-money, outfit, fees and presents, was 2500*l.*, of which 1000*l.* was advanced by the Foreign Office, under the administration of an Expeditionary Committee of the Royal Geographical Society. Throughout the exploration but one man, a Baloch mercenary and a confirmed invalid, died, although no one escaped repeated attacks of sudden and severe sickness; and the only affray was a drunken riot caused by the barbarous tribes of Urundi, which ended in the accidental death of a Mjiji slave. Knowing that every Englishman who appears in the outer East, either with or without the sanction of his Government, is looked upon practically as the representative of his nation, I travelled without disguise. And with a view of opening to European commerce and civilization a road into the heart of Africa,—a land of considerable resources, still suffering from the evils of total neglect on the part of other members of the human family,—we adhered in all points to the manners and customs of our country. By degrees the Arabs and even the Wasawahili, a jealous and suspicious race, lost all fear of us: they even consented to carry to the coast our maps and reports, which were forwarded as often as the uncertain caravan-posts permitted and our prolonged and serious maladies allowed. Providence willed me to succeed in deciding a question which has been under the judge for the last three hundred years, the existence and the number of the Central African lakes, and the westward prolongation of the Lunar Mountains of the Greek geographers. A new light has also, I sincerely believe, been thrown upon a subject veiled in the glooms of three thousand years—the “coy sources” of the White Nile. That thought solaced me through many a weary and many a painful hour—the belief that I was doing a work which may prove useful to mankind, and the hope that projects so auspiciously commenced may be as auspiciously pursued.

The original chapters of what is here presented to the reader were written upon the line of march in the tent and in the hut; my labour since returning to England has been confined to copying them for the press, and to collecting various elucidations. For the accuracy of the remarks upon the ethnology and the languages of the tribes, I alone am answerable. Captain Speke confined himself on the line from the coast to Ujiji to a survey of the country; his observations consisted of dead reckoning by compass bearings and time, estimation of distances checked by an almost daily latitude with sets of lunars for longitudes of crucial stations, computed by Mr. C. George, at the Map Room of the Society, and frequent determinations of altitudes by B. P. thermometer, which were corrected after his return to England. He wrote journals of his passage of the Tanganyika Lake, and his march from Unyam-embe to the Nyanza; both have been transferred to the following pages from the original diaries, in some parts corrected and modified by the reports of trustworthy and intelligent Arab travellers. I registered daily when health permitted meteorological observations with the barometer until the instrument was injured, and afterwards with the thermometer; and I made a variety of sketches and collections of vocabularies, which at a future time may see the light. We both kept field-books, which have been deposited with the Royal Geographical Society. I also placed in the hands of my employers a collection of objects illustrating the industry of the country, and especially of the cloths in greatest demand. Twenty-four skulls brought from the several regions have been transferred to the Royal College of Surgeons. The collection of rocks and soils which I made on the return march—that made on the up-journey having been lost by plunderers—was placed at the School of Mines, and was described by the permission of Sir Roderick Murchison. The shells of

the Tanganyika, brought home by Captain Speke, and a few land shells gathered by me on the road, have been described (in the Proceedings of the Zoological Society, June 28, 1859) by Mr. S. P. Woodward, F.O.S. Dr. Gray obligingly identified the few specimens of natural history which were shot by Captain Speke; Mr. Güntner observed the little collection of snakes; and Mr. Adam White furnished names for the insects. The plants of the maritime region were submitted to Dr. J. D. Hooker, of the Royal Gardens, Kew.

Though in no way pretending to attainments in any branch of natural science, I was careful to collect, as far as opportunities allowed, all that appeared novel or remarkable; the herbarium, however, which was left at Ujiji during our joint exploration of the Tanganyika Lake under the care of our Arab Ras Kafilah, was found on return hopelessly damaged by mildew and white ants.

The map prefixed to this volume will be found to differ upon several points and distances where information was derived from hearsay, instead of being the result of actual observation, from those published by Captain Speke in Blackwood's 'Edinburgh Magazine' (Sept. 1859), and in Dr. Petermann's 'Mittheilungen' (No. 9, of 1859). I have not, however, made any alteration in my original notes recorded after conversations with the Arabs. Mr. A. G. Findlay, F.R.G.S., has lent his good aid in looking over the various itineraries, and the map itself is the best proof of his diligence and ability. I cannot conclude without offering my best thanks to Dr. Norton Shaw, the Secretary of the Society, for his friendly exertions in the progress of the expedition, and his energetic assistance in preparing these pages for the press.

CHAPTER I.

GENERAL REMARKS.—EASTERN INTERTROPICAL AFRICA, SOUTH OF THE EQUATOR.

THE African continent, fenced by an unbroken line of coast, and by the barbarous exclusiveness of its inhabitants, especially the maritime and border tribes, has ever been to the outer world a land of mystery, of fables. The want of precise topographical notices has heaped hypothesis upon hypothesis; in fact no part of the habitable globe has given rise to theories and reports so marvellous, so contradictory, and so erroneous, as the central and equatorial regions, the heart of the great peninsula.

In the earliest days of the historic period the unknown African interior was determined by false views of geography and by analogy with the explored northern belt, to be a vast and sterile wilderness, dotted here and there with the fanciful oases—those “islands in a sandy sea”—of speculative geographers. This “Great Desert,” these “burning plains,” and these “rolling wastes” of Central Africa, found favour with the philosophers, and appeared upon the maps a blank of white paper, with enlivenings of ostriches and elephants until the commencement of the present century.*

* As late as 1822 travellers from the Cape conjectured “an immense desert, commencing in the south at the Great Orange River, and running northwards perhaps to the equator, extending also to the west as far as Great Namaqua Land and

The late Professor Karl Ritter, of Berlin, had the honour of expelling this venerable error by substituting for it another, which was as unhesitatingly adopted by some popular authors of the day. By a vicious analogy with the "island of High Asia" and the table-land of Quito he determined the unknown African interior to be an immense mountain terrace, rising abruptly from a torrid and pestilential littoral plain. Even the gradients were fixed: the third and highest was invested with those eternal snows which now dispute their existence with white marble, dolomite, and "pure white quartz, as it is seen in the Cradock Mountains, at the Cape of Good Hope, or as it shines forth conspicuous among the snows of Altai."* In these "luminous views" the heart of the continent was compared to an "advancing buttress," extending into the lowland countries Northwards, "nearly as the elevated terrass of Tibet and Bhutan advances southward in front of the great plateau of High Central Asia." By a succession of steps and gradients with lofty fronts, rising from the maritime plain, separated by long ridges running in transverse walls, and facing like a bulwark the waves of the Atlantic and Indian Oceans, were explained the thermal differences and the varieties of organic nature displayed by the African world. From the highest elevations the river systems were made to descend by rapids and cataracts, and, flowing through the lower circumjacent levels, to find an embouchure into the sea.

Professor Ritter's theory of the Central African plateau, with its vast uplands and high level plains, was presently supplanted by the other extreme—a depression. Like its predecessor, this conjecture was a generalization based upon inadequate premises. The traveller from "Alberogran," the "Lofty Plain" of Abyssinia, extended to the southern equatorial regions the highlands and plateaus which feature the northern. The partial labours and the short incursions of the "Mombas Mission," induced a belief which, until lately, had its day, that in Central Intertropical Africa, at a certain distance from the coast, the land begins to sink westwards, that there are no mountain terraces, but elevated groups and isolated peaks rising steeply from extensive plains, and finally, that these eminences, though often standing together, do not form a continuous ridge or chain. The missionary conjectured Africa between 5° and 12° s. lat. to be a flat or valley; using no instru-

the Damara country, which lies along the shore of the Ethiopic or Southern Atlantic Ocean." For this "unquestionably the most extensive desert yet known in the world" was proposed the name of "Great Southern Zahara or Desert."—*Travels in South Africa*, by the Rev. John Campbell, of the London Missionary Society. Vol. ii. chap. 9.

* "Inner Africa Laid Open" (p. 155), by William Desborough Cooley. London, Longmans, 1852.

ments but the eye,* he eliminated from a partial fall in the country inland of his station on the Rabai Hills, towards the mountains of Kadiaro and Kilima-*ngao*, "a general sinking of the land about 3° from the Indian Ocean westwards, till the general depression sinks into the bed of a huge lake." That the fall, if such exist, which has attained these mighty dimensions, must be of circumscribed limits, is proved by the water-shed of the Ozi and the Pangani rivers, its northern and southern boundaries, which certainly do not flow up hill.

Both the younger and the older theory, however, though fallacious on the whole, have in detail a modicum of truth. There remained then for the English physicist the honour of depicting by an admirable generalization the true features of the African interior. The ancient lacustrine conditions of the central regions, and the phenomenon that there exists in the heart of the continent a watery platform of less elevation than the flanking high grounds, in fact, a mingling of plateau and depression, was first announced *ex cathedrâ* by Sir Roderick I. Murchison, President of the Royal Geographical Society of London.† The hypothesis worked

* It is needless to remark how fallacious an instrument for levelling the eye is. The "Shimba Range" behind Mombasah is estimated by Dr. Krapp to attain a height of 4000 to 6000 feet: by B. P. thermometer it appears to rise from 750 to 1200 feet above sea level.

† 'Presidential Address to the Royal Geogr. Soc.,' 1852. The following explanation of the process which led to his remarkable discovery was forwarded to the author, at his request, by Sir Roderick Murchison:—

"My speculations as to the whole African interior being a vast watery plateau-land of some elevation above the sea, but subtended on the east and west by much higher grounds, were based on the following data.

"The discovery in the central portion of the Cape Colony, by Mr. Bain, of fossil remains in a lacustrine deposit of secondary age, and the well-known existence on the coast of loftier mountains, known to be of a Palaeozoic or primary epoch, circling round the younger deposits, being followed by the exploration of the Ngami Lake, justified me in believing that Africa had been raised from beneath the ocean at a very early geological period; and that ever since that time the same conditions had prevailed. I thence inferred that an interior net-work of lakes and rivers would be found to be prolonged northwards from Lake Ngami, though at that time no map was known to me, showing the existence of such central reservoirs. Looking to the west as well as to the east, I saw no possibility of explaining how the great rivers could escape from the central plateau-lands and enter the ocean, except through deep lateral gorges formed at some ancient period of elevation when the lateral chains were subjected to transverse fractures. Knowing that the Niger and the Zaire or Congo escaped by such gorges on the west, I was confident that the same phenomenon must occur upon the eastern coast when properly examined. This hypothesis, as sketched out in my 'Presidential Address' of 1852, was afterwards received by Dr. Livingstone, just as he was exploring the transverse gorges by which the Zambezi escapes to the east; and the great traveller has publicly expressed the surprise he then felt that his discovery should have been thus previously suggested.

"The explorations of the E. African expedition, by Burton and Speke, go vastly to extend this generalisation. If the great Nyanza Lake should really be found to flow into the White Nile, it is simply because there is no great eastern transverse fracture like that of the Zambezi, by which the waters can escape, so that subtended on that flank by lofty and continuous mountains, the stream has no

out in the geographer's study was triumphantly confirmed three years afterwards by Dr. Livingstone, when traversing the African continent.

The following pages will establish the eastern limits of the "elevated-trough" formation of the central regions, will elucidate the theory, by proving from levels and watersheds the intervention of seams of higher ground disposed across the lesser axis of the continent, and will correct the erroneous theory of the eastern *versant* of the Tanganyika Lake.

Geographers can now describe with accuracy the general features of the African peninsula. The northern and southern belts of the vast irregular triangle, save in the exceptional places where perennial streams diffuse fertility, and along the coast where excessive humidity engenders a narrow growth, are dry and sterile, here laid out in torrid plains, there broken into barren stony ridges. Bisected by the zone of almost constant rain, and subject to the south-west monsoons,—the local deflections of the south-east trade winds,*—from the Ch  d Lake, the Bahr el Ghazal, and the southern frontier of Kordofan, the region of fertility, commencing from about 15° N. lat., stretches in a broad belt to 20° S. of the equator, or the northern limit of the Ngami Water. This tract of 35° along the major axis of the continent rejects the old hypotheses of desert and plateau, and forms the sharpest contrast to our grandfathers' idea of Central Africa.

The eastern section of the central belt south of the equator, which will be described with detail in these pages, is a region in which Nature displays her wonted variety. Near the coast are low littoral plains and rolling ground, with lagoons, savannahs, and grassy valleys, the courses of large streams, whose banks, inundated by rain-floods, retain in the dry season meers, morasses, reedy marshes, and swamps of black infected mud. Beyond the maritime regions rise lines and mountain groups of primary and sandstone formation, ridges and highlands often uncultivated, but rarely sterile, with basins and hill-plains of exuberant fertility, traversed by perennial runnels and streams. Beyond the landward slope of these African Ghauts begins an elevated plateau, now level and tabular, then broken into undulations and gentle eminences, displaying by huge outcrops of granites and syenites the activity of the igneous period, where rain is deficient, thinly clad with bush, broom, and shrubbery, with thorny and succulent thickets, cut by furrows and burnt by torrid suns, and veiled where moisture abounds with tangled jungle rising from shallow valleys, with umbrageous

course opened to it bat northwards. My opinions on these points are further developed in my last Anniversary Address (1859)."

* As will appear in a future page, the S. W., or rainy monsoon, in this portion of Africa exactly resembles the great falls in the Valley of the Mississippi, a S.W. deflection of the S. E. trades from the Pacific Ocean.

forests broken into glades of exceeding beauty, and with interjacent plains of emerald or amber-coloured grass, from which trees of the darkest laurel green, and knolls and clumps, large and small, against which no feller has come up, cast thick shade over their subject circlets of luxuriant underwood. Dull, dreary, and monotonous, where lying desert, in parts this plateau is adorned with a lavish Nature's choicest charms and varieties. Beyond it, again, the land sinks into the Lake Region, or the great Central Depression; the superabundant moisture diffused by its network of waters, fordable and unfordable, covers the land with a rank growth of gigantic grasses and timber trees, and the excessive luxuriance of nature proves unfavourable to the development of animal organisms. Throughout the line, to judge without statistics, in the more sterile parts, about one-fifth, and in the more fruitful one-half of the land, is under cultivation; whilst almost everywhere the abundance of the desert vegetation evidences the marvellous capabilities of the almost virgin soils.

The superficial conformation owns four great varieties. When low the plains are reedy and muddy,* when higher raised and well watered, they bear evergreen jungle and forest trees: in the deserts, where water lies deep beneath the earth, and rain is scarce, the plateaus produce short tufty grass, bush and scraggy thorn, and in rare spots the land is almost bare. The sylvan vegetation depends upon the proximity of water and the copiousness of the rains. In the lands of Ugogi, Ugoro, and its flanking deserts, Unyanyembe and Urori, where water is far below the surface, and where the dry season is long and severe, the woods are principally dwarfed mimosas, thorns, and gums. The banks of fiumaras and nullahs, which are temporarily inundated, supply the noblest trees. Wild fruits and fragrant flowery shrubs abound in the mountains of Usagara, and fine timber is found throughout Uvinza and Ujiji.

The Western half of the fertile Central African land reflects the Eastern. The correspondence of the two coasts has frequently been the subject of remark. Modern travellers, Magyar,† Graca,‡ and Livingstone, who have penetrated into the interior from Loanda, met with the same maritime plain of rank and exuberant

* In these pages the words mud, swamp, fen, morass, are used synonymously when the ground is comparatively solid; slough, mire, and slush denote a more liquid condition; and slime when decayed matter mingleth with the soil. The moor or heathery plain, and the bog, firm or shaking, are features unknown in Eastern Africa.

† M. Ladislaus Magyar, a Hungarian officer, made extensive explorations through Western and Southern Africa in 1847—1856, and has lately published an account of them in the Hungarian language, which has been translated into German. See 'Journal of the Royal Geographical Society,' vol. xxiv., p. 271.

‡ M. J. Rodriguez Graca, a Portuguese merchant, entered Western Africa via Bié in the years A.D. 1843-47, penetrated deep into the unknown Continent, and visited the capital of Mwata ya Nvo (Matiamvo), the sovereign of Uropua.

vegetation, cut by rapid streams, disemboguing into the Atlantic; a similar expanse of stony ridges and uplands forming the great western water-parting, deeply dented by straths, valleys, and Lupata or glens, here with wild and dreary woods, inhabited by a scattered population of hunters, there with shrubby and thorny wilds, where foxes bark, lions roar, and hyænas whimper throughout the "blessed night." As the travellers sank into the central depression they were entangled in the same labyrinth of waters, some sluggish and tortuous, others swift and straight: in places they traversed scenery "presenting pictures of beauty which angels might enjoy;"* in others low champaigns, deformed by reedy swamp, grassy marsh, and wide lagoons, the absorbents of surface drains, or the recipients of monsoon torrents, which, whilst drying under the tropical sun, diffused around them disease and death. The two climates, the diseases, even the effects upon the European constitution, resemble each other: there is the same alternation of damp cold and depressing heat, the same prevalence of malarious and dysenteric disease, the same sensation of invincible languor and oppression. The fauna—many of them purely African—are identical: lions and leopards, elephants and hippopotami, zebras and buffalos, giraffes, antelopes, and crocodiles. The ethnological developments, as the physiognomy of the two races, are parallel, there are the same cruel despoticisms, eternal feuds, and bloody rites. On both sides of the continent the imports, piece-goods and wires, cowries and beads, are bartered for similar exports, slaves and ivory. The dress of the inhabitants is everywhere unbleached cotton, skins, or grass-kilts; they even resemble one another in diet, goat's meat, poultry, and river fish, holcus, manioc, bears, pulse, and the "beer called Pombe."

Similarly the analogy between the Northern and Southern divisions of the African Continent, Egypt, and the Cape of Good Hope, has been remarked by our earliest travellers.†

Before entering into the details which will establish the similarity of the Eastern and Western African interior, the limits of the lands now to be described must be laid down.

The course of the East African Expedition from Kaole, a roadstead on the continent westward of, and opposite Zanzibar Island, in E. long. $38^{\circ} 51' 30''$, to Ujiji, on the Tanganyika Lake, in E. long. 30° , contains $8^{\circ} 51' 30'' = 530$ geographical, which, by the tortuousness of the footpath, becomes at least 955 statute miles. From this base-line offsets were made to the island of Kasenge, near the western shore of the Tanganyika, to the land of Uruwwa, at its north-western extremity, and to the Nyanza or Ukerewe

* 'Journeys and Researches in Southern Africa,' by Dr. Livingstone, chaps. xxii.—xxvi.

† Barrow, 'Travels in Southern Africa,' chap. iv.

Lake, sixteen long marches northward from Unyanyembe. These are the regions actually visited. The intelligent and communicative Arab traders of Unyanyembe supplied information concerning the broad plains west of the Tanganyika, and the northern kingdoms of Karagwah, Uganda, and Unyoro, extensive and powerful despotisms whose names are yet unknown to Europe.

This extensive tract of country may be divided geographically, not conventionally or politically, into five Regions.

The first, extending from the shores of the Indian Ocean to the Mountains of Usagara or the Eastern Ghauts of Africa, embraces the alluvial valleys of the Kingani and the Mgeta Rivers.

The second is the mountainous belt of Usagara running parallel with the Eastern Coast, and rising gradually from the alluvial maritime valleys.

The third is a flat plateau or table-land, whose eastern limit is the Ugogi Dhun, or valley below the landward slope of the Usagara Mountains : it contains the wilderness Marenga Mk'halii, the inhabited country of Ugogo, and the dismal waste " Mgunda Mk'halii."

The fourth region, Unyamwezi and Eastern Uvinza, is a hilly table-land extending from the western skirts of Mgunda Mk'halii to the eastern bank of the Malagarazi River.

The fifth embraces Western Uvinza and the now wasted lands of Uhha (Oha), extending from the Malagarazi River over the southern skirts of the Lunar Mountains to the Tanganyika or Sea of Ujiji.

These several regions form the principal subject of the following pages. Of each is described in due order its physical geography, its lines of route, with, thirdly, its political and ethnological peculiarities.* Readers and future travellers, however, are warned that in Eastern and Central Africa not only the tracks and foot-paths which act as roads, but even the settlements and hamlets, owing to the frequent wars and the migratory habits of the population, are frequently shifted. Few even of the largest villages were found standing by the Expedition after 18 months' sojourn in the interior : in places a growth of wild grass had obliterated every sign of human handiwork. But though highway and habitation in the present stage of African civilization are essentially ephemeral, though tribes disappear, and now jungle invades field, and then field jungle, yet will the portrait of any one part of the country long apply, it is feared, to other sections of the same region. Roads may change direction, but they will preserve their present features, and settlements must disappear, but for years to come

* The field and note-books of the Expedition have been deposited with the Royal Geographical Society.

they will rise again in similar form a few miles from their older sites.

This semi-nomadic state, supposed to be the effect of the "wandertrieb" or vagabond instinct uncurbed by the habits of civilization, has precluded the possibility of erecting large and stable habitations. Though vestiges of stone houses have been discovered in the Eastern Horn, in these days between Harar (Hurrur) and the ruined Portuguese cities upon the Zambezi River, inner Africa now knows not one town of masonry. In our theoretical maps of the country the circlets which in cartography denote cities or towns, serve to mislead the geographer: their names prove them to be "Saltanat," lordships, provinces, or districts. These, as the least liable to variation, are chiefly used in the following pages: when the name is that of a village or of a hamlet the reader is always guarded from mistake.

Throughout E. Africa made roads, the first test of progress in a people, are unknown. The most frequented routes are foot-tracks like goat-walks, one to two spans broad, trodden down in the travelling season by man and beast: during the rains the path in African parlance "dies," that is to say, it is overgrown with vegetation. In open and desert places four or five lines often run parallel for short distances. In jungly countries they are mere tunnels in thorns and under branchy trees, which fatigue the porter by catching his load. Where fields and villages abound they are closed with rough hedges, horizontal trunks, and even rude stockades, to prevent trespassing and pilferage. Where the land is open an allowance of one-fifth must be made for winding: in closer countries this must be increased to two-fifths or to one-half, and the traveller must exercise his judgment in distributing the marches between these two extremes. In Uzaramo and Khutu the tracks run through tall grasses, which are laid by their own weight after rains, and are burned down during the hot seasons: these paths often skirt cultivated lands, which they are not allowed to enter, miry swamps are spanned, rivers breast-deep are forded, with muddy bottoms and steep slippery banks, whilst deep holes, the work of rodents and insects, render them perilous to laden cattle. In Usagara the gradients are surmounted either by beds of mountain torrents or by breasting steep and stony hills, mere ladders of tree-root and loose stones: animals with burdens cannot ascend or descend them. The worst paths in this region are those which run along the banks of the many streams and rivulets, and which traverse the broken and thorny ground at the base of the hills: the former are "thieves' roads," choked with long succulent grass rising from slushy mud; the latter are a sequence of rises and falls, with a small but ragged and awkward watercourse at every bottom. From Usagara to Western Unyamwezi the roads lead through thick

thorn-jungle, and thin forest of trees blazed or barked along the level track, level, but interrupted during the rains by swamp and marsh. They are studded with sign-posts, broken pots and gourds, horns and skulls of game and cattle, imitations of bows and arrows pointing towards water, and heads of holcus. Sometimes a young tree is bent across the path and provided with a cross bar, here is a rush-gateway like the yoke of the ancients, or a platform of sleepers supported by upright trunks, there a small tree felled and replanted, is tipped with a crescent of grass twisted round with bark, and adorned with huge snail shells, and whatever barbarous imagination may suggest. Where many roads meet those to be avoided are barred with a twig or are crossed by a line drawn with the foot. In W. Uvinza and near Ujiji the roads are truly vile, combining all the disadvantages of bog and swamp, river and rivulet, thorn-bush and jungle, towering grasses, steep inclines, riddled surface, and broken ground. The fords on the whole line are temporary as to season, but permanent in place : they are rarely more than breast high, and they average in dry weather a cubit and a half, the fordable medium. There are but two streams, the Mgeta and the Ruguvu, which are bridged over by trees; both could be forded higher up the bed, and on the whole route there is but one river, the Malagarazi, which requires a ferry during the dry season. Cross roads abound in the populous regions. Where they exist not, the jungle is often impassable, except to the elephant and the rhinoceros : a company of pioneers would in some places require a week to cut their way through the network of thorns and the stockade of rough tree trunks for a single march. The directions issued to travellers about drawing off their parties for safety at night to rising grounds will not apply to E. Africa,—it would be easier to dig for themselves abodes under the surface.

The waterparting of the transversal breadth of the continent south of the Equator is fourfold. From the regions eastward of Central Usagara the rivers flow in almost parallel lines eastward with a southerly deflection to the Indian Ocean. Such is the general rule from the Eastern Horn of Africa to the Mozambique, the effect of that law which gives an austral declination to peninsulas subtended by ranges of high ground. The counterslope or landward face of the mountains and the plateau extending to Eastern Unyamwezi shed their waters to the south-west and southwards into the Rwaha (Lwaha)* River, which near the Indian Ocean takes the name of Rufiji (Lufiji).* In Central Unyamwezi the fumaras†

* These dialectic forms of orthography will be explained in the next chapter.

† The fumara and the nullah are both surface-drains, but the words express different features of ground. The fumara is that broad, sandy, and rocky bed, more generally dry than wet, the Homeric description of which has so often been misunderstood in Northern Europe, where the formation is unknown. In our lan-

and intermittent surface-drains, which take the place of rivers, flow northward into the Gombe Nullah, a first-class tributary of the perennial Malagarazi River, which descends from the Mountains of Urundi by a circuitous course to the south-west into the Tanganyika Lake. Thus the oriental half of the African continent has a compound versant, eastward with southing and westward with southing, and the land of Unyamwezi forms, upon the line followed by the Expedition, the main water-parting.

The occidental half of Southern Intertropical Africa has a similar division. Arab travellers to Uruwwa, a central district west of the Tanganyika, represent the land to have a complicated river system which is absorbed by that lake. The Portuguese explorers, and later still Dr. Livingstone, have placed the Highlands or Western Ghauts of Africa, which separate the Atlantic versant from that of the Indian Ocean, in east longitude 18° - 19° , and the Dilolo Lake, whence flow the Loke or Kasai and the Leeba affluent of the Zambezi, in south latitude $11^{\circ} 32'$, and in east longitude $22^{\circ} 27'$.

CHAPTER II.

THE COAST OF ZANZIBAR, THE MRIMA, AND ITS POPULATION.

THE strip of coast stretching from Cape Delgado in south latitude $10^{\circ} 41'$ to the equator, or more strictly to the Juba, also called the Govind (Gulwen) River, which debouches in south latitude $0^{\circ} 15'$, was named in early times by the Greeks Zingis,* Zingisa, and Zingium, in the Adulitic inscription Zingabene,† and by Asiatics Zinj, Zenj, and Zanjibar—Nigritia or Blackland—from the Persian “Zang,” in Arabic “Zanj,” a negro, and “bár,” a land or region. The Arabs, writing the word Zanjibár and pronouncing it Zangbár, now apply it to the island and even to the principal town, rather than to the central section of the coast. When the mainland is to be distinguished from the island the former is termed “Barr el Moli,”‡ or continent, in opposition to “Kisiwa.”

As usual in Africa, however, where there is no general term for

guage we translate it “river,” and we read at times of a “dry river.” The nullah generally expresses a deep and somewhat narrow watercourse, which, like the fiumara, often pours a torrent during the wet monsoon. The fiumara is more common in hilly and mountainous countries, the nullah in level and loose soils. Both are deep sunk below the country, and after rains are so exhausted by droughts as to be incapable of supplying irrigation.

* Ptolemy, lib. iv., places Zingis in 81° long. E. of the Fortunate Islands, and $3^{\circ} 30'$ North lat.

† In vol. 3, chap. vi., of Lord Valentia's ‘Travels,’ Zingabene, in the Adulitic inscription, is supposed to be a province of Galla-land.

‡ The word “Moli,” commonly used in the corrupt Arabic of Zanzibar, will vainly be sought for in the dictionnaires.

the continent,* there are names for the minor subdivisions of the country, and these are liable to constant change. In the time of Ibn Batutah (14th cent.)† the word "Sawáhil" or "The Shores," was limited to the coast extending from two days' sail south of Mombasah to Point Puna or to Kilwa. Of later years the half-Somali towns of Makdishi, Lamu, Barawa (Brava), Bette (Patta Island), and those adjacent are placed in the "Barr el Banadir," contracted to El Banadir, "Harbour-land," or "the Harbours," and the maritime region southward as far as Mombasah, obtains the name of "Sawahil." Finally, the coast between Mombasah and the Delta of the Rufiji River is termed the "Mrima," or "The Hill."‡

This central portion of the East African coast has been so often described that a mere sketch will suffice, with some details when the theme is new. The general line was first laid down by Captain Owen; his laborious charts, however, are always deficient, and often erroneous; even the great Rufiji River is unaccountably omitted. The items filled in by the later geographers present a curious uniformity of error. In the "Mombas Mission Map," for instance, between Pangani and Kilwa, scarcely a settlement is

* Curious to say, the name of Africa even amongst ourselves is still doubtful. Philologists have preferred for it six several and distinct derivations. The classical dictionaries explain it by a privative and *frigus*, which is absurd, as a description of a continent which in many parts, of the north especially, is colder than Italy. Berber scholars propose "ifri" (a cave), in the plural *yefren*, as the synonym of *Troglodytica*, and the origin of Afrikiyah and Africa. Some ethnographers deduce it from Ophir (עִופֵר), the land of gold; but Ophir has not been proved to have been in Africa, and the presence of the Vau is a serious defect. Josephus (Lib. xv.) naturally derives Africa from Opher, a grandson of Abraham, who went into Libya at the head of a powerful army. The Arabists have derived it from Ufr, in the Himyaritic dialect, meaning "red," a characteristic of the soil and rivers of East Africa: Ufr (عُفَر), however, is written with an initial Ayn, whereas Afrikiyah (افريقيا) begins with an Alif. Finally, the Hebraists have deduced it from קָהִ, in Arabic قَاهِي, "be separated," in allusion to the peninsular form of the continent.

But may not the disputed word be derived from an ancient tribe dwelling on the maritime regions westward of the Red Sea, which would be visited at the earliest period by Phenician and Syrian navigators? The Danakil, supposed to be remnants of a powerful race, still call themselves Afar: the word sounds exactly like the Afer of Virgil in an Italian mouth. The Coptic *Kabi*, a region, would supply the termination, and thus Afar Kabi would signify the land of the Afar.

† The 'Travel of Abu Abdillah Mohammed, surnamed Ibn Batutah,' chap. ix. The quotation is omitted in Professor Lee's imperfect English translation. (Chap. ix.) It is found, however, in the French translation lately published by MM. Defremery and Dr. Sanguineti.

‡ The Arabs of Zanzibar limit the word Mrima to that part of the continent extending from Pangani Town S. to Mbuamaji (Boromaji). They distinguish between "Mrima" and "Mlima," which are however merely dialectic pronunciation varieties of the same word. The former is applied to the coast, in contradistinction to the Kisawa, or island. The latter signifies a hill or eminence generally, but more especially one not stony, a rocky mountain being called *Jebáli*, from the Arabic *Jabal*. The diminutive of Mlima is Kilima, also a special form used in combination with the proper name, like the French 'mont.' It enters into many words, as Kilima-*ngio*,—as Kilimanjaro is pronounced by the Arabs—Kilimani (Quilimane), and Kilimat-si.

correctly placed : those lying north are transferred to the south of their neighbours, and thus the general impression conveyed to the mind serves but to deceive.

Upon the Mrima from the Pangani to the Rufiji River open roadsteads, sometimes partially defended on the weather-side by low islands and coralline reefs, take the place of ports and harbours. The rise of the tide, which still requires special observations, is set down in the charts at 10 to 11 feet. As the shore shelves without steps or overfalls, and the retiring waters leave a wide expanse of sand or muddy ooze, native craft must be shored up during the ebb, and square-rigged ships usually anchor at a distance of 2 to 3 miles. The Raz de marée, or rollers—that hurling sagging sea, so trying to small vessels upon the Mozambique coast and about Cape Guardafui—is here little feared. Dows, however, are often wrecked by sudden squalls, which are most violent at the end of the north-east monsoon. A heavy purple cloud-bank rolls up generally from the east, with a cold gust of wind, sometimes so impetuous as to cause accidents ; after a few huge warning-drops, a pelting shower is succeeded by a dead oppressive calm. The peculiar feature of these seas is the great "Mozambique current," which, according to navigators, setting in-shore from the north of Madagascar,* through the Comoro islands, bifurcates near the coast, whence one branch flows southwards into the current of Cape Agulhas (Lagullas), whilst the other follows the opposite direction towards Guardafui. During the north-east moonsoon, about the latitude of Lamu (s. lat. $2^{\circ} 16'$), it sets to the south-west, and the meeting of the currents causes a tide-rip and a short chopping sea. In the want of precise and modern scientific notices, this phenomenon is enveloped in obscurity. The only points generally recognised are its extreme irregularity, sometimes flowing 20, at others 100, miles in the 24 hours ; its increased rate during the south-west, and its diminished force during the north-east monsoon ; together with its uncertain breadth, varying from 2° to 4° . The day, however, will come when, like the great Gulf-stream, an accurate hydrography will render the Mozambique current and its counter-currents useful to the navigator.

The general formation of the Mrima-coast is a mass of coralline, in places comminuted and compressed into a rude sandstone conglomerate ; it is broken into a brilliant white sand by the violent action of the tides. The islets forming the breakwaters to the several roadsteads are generally waterless, and too small for habitation : on

* Even this limitation appears to be arbitrary. Timber and planks from the ship *St. Abba*, wrecked off the island of Juan de Nova, were drifted up as far as Brava, on the eastern coast of Africa. Horsburgh—whose information upon the subject of this ground is derived from antiquated logs, some, Capt. Bissell's for instance, dated as far back as 1799, is peculiarly unsatisfactory. The 'India Directory' indeed best shows how much a new and accurate survey of the coast is required.

K'hwale Island, where there is a settlement, the necessary element must be brought from the mainland. These outliers, appearing like detached pieces of coast, often forming narrow canals—the διώρυγες, or canals, of the Periplus—are mere ledges of coralline, raised but a few feet from the waves and green to the water's edge, except where the set of the tide has washed down the rock into a state of sand. The rhizophoræ form on these “*insulæ opacæ*” an impenetrable wall; when the tide is out, the cone-shaped rootwork supporting each tree rises high and bare from the deep sea-ooze, parasitical oysters cluster over the trunks at water-level, and between the adults rise slender young shoots, each tipped with a bunch of brilliant green. These forests of the sea are traversed by runs or drains of bare coralline rocks, smooth and waterworn near the sea, rough and sharp inland, and beyond them is the sandstrip that denotes the boundary of the tide. All such coralline formations, “perched upon the summits of submarine mountains,” are essentially fickle. In some places the banks still rise; at Zanzibar, it is said, the English or Northern passage is in process of being filled up. On other islands, ruined buildings, now half submerged, denote a considerable subsidence. North of Mombasah, and south of the Rufiji River, the islands, which, often of considerable size, contain sweet water, have formed, from time immemorial, the sites of settlements and depots, able to defy the savage tenants of the coast, who, Kafir-like, dread and avoid the sea. There is generally between these breakwaters and the mainland a landlocked basin, approached by a deep channel, and forming a safe anchorage for small craft. Their main disadvantage is, that opening—unlike Zanzibar—to windward, when the south-west monsoon shifts, as is frequently the case, to the south-east, vessels are compelled at a considerable risk to warp out.

In many places upon the coast are low dunes, formed by the regular action of the sea-breezes, and held together by a tough and bright-flowered creeper, which owes its vitality to the abundant rains; in others, again, diminutive cliffs and ledges of coralline overlook the deeper waters. The alluvium of the plain, here a rich red loam, there a dark humus, veiled with thin sand and thickly covered with long coarse grasses, in depth varies from 1 to 6 inches. The surface is deeply indented by “*khor*,” or creeks, which not unfrequently receive the waters of small surface-drains from the neighbouring hills. These inlets, with their terminating bayous or lagoons, render the climate injurious to man. Tall mangrove forests cluster around their courses, depositing a mass of vegetation which annually adds to the sheet of black and fetid ooze that sends forth a surface-scum of brown tint and sickening odour. Through these hotbeds of disease, fit only for the home of the hippopotamus and the crocodile, waters, prolonged by sea-armis, find their way

into the low levels behind the shore. The number and the extent of the lagoons, which are swamped by rain, inundated by every high tide, and left by the ebb to putrefy under each torrid sun, render the land-breezes of night peculiarly deleterious. This alluvial plain is the habitat of the coco; it bears also the sand-loving tamarisk,* and, though rarely, the copal tree,† On the banks of the little estuaries, where the rich mould is thickly covered with wild vegetation, a tall and graceful areca,‡ which merits its Hindu poetical description, "an arrow shot down from heaven," the noble mparamusி,§ and the grotesque raphia,|| display a tropical luxuriance.

The peculiar aspect of the Mrima, which, viewed from the sea, swells in little hills that undulate parallel with the waters, is caused by the ancient sea-beach, that indicates a secular elevation of the

* The tamarisk is called by the people Mkonazi. This well-known growth, loving the extremes of heat and cold, is found, though rarely, in the mountains of Usagara. In the Kisawahili language the initial M, a moveable letter, prefixed to the name of the fruit, denotes the tree. It is probably an abbreviation of mti, a tree, and may have arisen in the language as our "T-totaller" arose from "totaller." When the initial M is dropped, the word denotes the fruit or the produce, as mbayu, a calabash tree; buyu, a calabash gourd; msandarusi, a copal tree; sandarusi, copal gum.

† Called upon the coast Msandarusi: concerning this tree details will be found in chap. xvi.

‡ The nut of the areca, here termed mpopo'o, is "sweet" and good. The tree is most plentiful upon the Pangani River. As an astringent and corroborative its fruit is used to counteract the dyspeptic and dysenteric diseases endemic in these lands. At Zanzibar it is an article of general consumption by all tribes, ranks, and ages. The Arabs carry it into Central Africa, considering the habitual use a preservative against dysentery. The Hindoos declare it an antidote to rheumatism and other "cold" diseases. The káth or catechu, prepared by boiling down the areca-nut, is here unknown. Some years of experience, and frequent questioning of habitual betel-eaters, raise doubts as to the existence of narcotism in the nut, a fact apparently presumed by chemists. The effect upon a European in the moist, relaxing climates of the tropics is simply tonic and astringent.

Ibn Said, a traveller of the 13th century, in a passage much misunderstood by translators, mentions mukl (مُكَلٌ or bdellium) and fausal (فُوْسَلٌ areca nut) as productions of Eastern Africa. Travellers in the 19th century have doubted their existence. Nevertheless, Ibn Said is right.

§ The mparamusி, also called mgude (*Taxus elongatus*, the geel hout or yellow wood of the Cape?) is a perfect specimen of arboreal beauty. A tall columnar bole, without knot or break, straight and clean as a mainmast, 40 or 45 feet in length, and painted with a tender greenish yellow, is crowned with parachute-shaped masses of vivid emerald foliage, whilst sometimes two and even three shafts of different girths spring from the same root. An avenue of these trees on the banks of streams is surpassingly picturesque. The habitat of the mparamusி extends from the shore as far west as the central water-parting of Usagara. The wood of this splendid tree is said to rot easily.

|| The raphis, here called the "Devil's date," is celebrated as having the largest leaf in the vegetable kingdom. It spreads out almost from the ground in a noble plume, whose feathery fronds droop most gracefully over the stream below. The huge midribs of this palm, cut, trimmed, and floated in rafts down the Pangani River, are converted, like the split trunks of arecas, into building materials for hut walls and palisades.

coast. This feature, wherever regular, is a gently-rounded surface, rising 100 to 150 feet from an alluvial plain streaked with carbonate of lime. It is composed of ruddy sand, mixed with vegetable matter, and it is marked with regular lines of water-rolled pebbles, generally pink and white quartz. In some places there are distinct signs of a double sea-beach, divided by a flat step. The uniformity of the Mrima is broken by depressions, hillocks, and cones, which form excellent landmarks for the coasting mariner. Upon the upper part of the alluvial plain and the raised beach are the shambas, or plantations of the coast people, who export grain to Zanzibar and even to Southern Arabia. In these parts the wild vegetation is a dense and thorny jungle. The principal trees are mimosas and acacias,* of many varieties, with flowers of delicate hues, white, pink, and yellow; palms, especially the *Ph. sylvestris*,† and the *Hyphaena*, a distorted toddy-tree;‡ with fruit-trees, the jack,§ the mango,|| the custard-apple,¶ the pine-apple,**

* The white thorned acacia (*Acacia horrida*) and the "wait-a-bit" (*Acacia detinens*) are the staple growth of the drier lands in E. Africa. The former has often an oval bulb at the base of the thorn, a peculiarity sometimes seen in India and Sindh. This oval contains the weevil, and when green it attracts several species of ants. Grown old and woody, the thorn becomes hard, pointed, and sharp as a packing needle.

† The ukhindu or brab, of whose fronds mats and the grass kilts worn by some of the tribes are made, is found from the coast to Ujiji, proving that the date tree might be naturalized in the drier parts of the country. It bears an edible fruit, which does not, however, appear to attain a complete maturity in the damper climates. Generally a stunted tree, it rivals in favourable situations the graceful dimensions of the areca. The brab was observed by Dr. Livingstone in S. Africa. In the country of the Kazembe it is called by travellers uchinda.

‡ This mvumo—of which the well known Dom Palm of Africa and Arab'a (*H. Thebaica*) is a congener—is most abundant in Khutu and Uzaramo. The trunk is rough with the drooping remains of withered fronds, and it divides into branches resembling a system of Y's. Its oval fruit, of a yellowish red, often the size of a child's head, is eaten even when unripe by the people, and is said to be an especial favourite with elephants. Pulpless, hard, and stringy, it has—when mature—a slight taste of gingerbread. The stone contains an albumen which would break any but a savage's teeth. A few specimens of this tree are found in and about Bombay.

§ The mfenesi (from the Hindostani Phannas) is of stunted dimensions. This, the largest of fruits, flourishes in the maritime regions, and on the platform of Uzaramo, within reach of the sea breeze.

|| The mwembe or mango grows upon the coast, and extends to about three marches along the rolling surface above the ancient sea-beach. It is a richly foliaged but a stunted tree, never attaining the magnificent dimensions of the Zanzibar-island mango.

¶ The *Annona squamosa*, called in Kisawahili mkwe or mtope-tope, flourishes wild throughout the maritime region, but chiefly on the forest land above the fluvialine valleys as far as Eastern Usagara. Its small, hard, and dry fruit is eagerly eaten by the people. The smooth variety called rampal in India was not observed beyond the island of Zanzibar.

** The mánáñázi or pine-apple grows luxuriantly as far as three marches from the coast. It is never cultivated, nor have its qualities as a fibrous plant been discovered.

the lime,* the guava,† the cashew-nut,‡ the plantain,§ the jamli,|| the papaw,¶ the bidam,|| and the caoutchouc-tree.†† The copal-tree flourishes at far intervals, the coffee-shrub was once common, and a few clove plantations are now found near the coast.

The climate of the Mrima resembles that of Zanzibar in most conditions: according to the people, however, it is drier, and is less subject to rain—a probable result of the action of its heat upon the vapours of the south-east trades. To avoid the confusion of the lunar year, the seasons are reckoned and the times for sowing the several crops are determined by the "Nayruz," an Arabic corruption from "Nauruz," the New Year's Day of the Persian era, which between A.D. 1829-1879 falls upon the 28th—29th of August. Thus the Masika, or greater Rain, is calculated to set in at Zanzibar after the sun has passed the zenith on the 4th of March: it commences on the 200th (= 18th of April), and it ceases with the 240th day after the Nayruz (= 28th of May).†† Again, 20 days after the Masika-period begin the Mcho'o,

* The madimu, or lime,—a peculiarly long-leaved tree—grows luxuriantly upon the coast, bearing fruit which hangs down almost to the ground. It extends to the head of the Kingani valley, and has been introduced by the enterprising Arab traders into Unyamwezi.

† The guava, here called mpera, probably from the Portuguese "pera," is an exotic, which now grows wild in the vicinity of the coast. It is so full of seeds that it is almost uneatable.

‡ The Anacardium kaju, or cashew-nut, though abundant upon the island, is rare upon the mainland of Zanzibar. Its use by distillation is unknown at both places.

§ For other details concerning the varieties of this fruit see Chapter vii.
|| The Indian jamli (*Eugenia Jambu*) is mentioned by Ibn Batutah as the "jamun;" by the modern Arabs it is termed zam, and by the Sawahili Mzambārān. It is a noble tree, which adorns some of the coast villages and plantations, and it produces a damson-like fruit, with a pleasant subacid flavour.

¶ The mpapaya, or papaw, flourishes in the alluvial valleys of the Kingani and the Mgeta rivers; its produce, like other fruits, is never allowed to ripen upon the tree. After several mistakes in transplanting the male or barren tree, the papaw has been introduced by the Arabs into Unyanyembe.

** The bidam, a corruption of the Persian Bādām, and locally called mkungu (kungu being the fruit), is the well-known "Persian almond" of W. India and the Seychelles Islands. It was observed in the town of Zanzibar and on the island of Kilwa, where, however, the fruit does not attain maturity. A large spreading tree, with knotty bole, and fleshy laurel-like leaves, it may, perhaps, explain the *laureum* alluded to in the Periplus (chapter 11) as growing about Ras el Fil (Ras Felix). It is certain that neither the bay nor the laurel exists in East Africa; we must, therefore, seek for some other translation than "laureum."

†† The mpira, or caoutchouc-tree, flourishes in the maritime plains of Eastern as of Western Africa; it is said to produce gum of good quality. (See chap. xvi.)

†† Some Arabs who pretend to astronomy make the masika synchronous with the helical setting and the vuli with the helical rising of the Pleiades; a similar effect in Northern Arabia might explain the hidden meaning of the "sweet influence" of this constellation. This is apparently known to the African Arabs, who, according to Dr. Barth ('Travels in Africa,' chap. 74), call the exceptional showers before the setting-in of the rains "Maghreb el Thraya" (Surayya), or the setting of the Pleiades. Nothing can be more improbable than the interpretation offered by the learned meteorologist, Licut. Maury, LL.D., who supposes ('Explanations

the occasional showers between the former and the latter rain. Extending as far as the mountains of Usagara, they last for a month or six weeks, in June and July, and are accompanied by thunder and lightning and cold winds,* which are often so violent as to lay the latest crops of rice. The Vuli, or lesser Rain—the autumnal Monsoon—commences with the 20th day after the Nayruz, and continues for 3 to 4 weeks, or from our 19th of September to the 17th of October, that is to say, ending a little after the southern passage of the sun, which here takes place on the 9th of October. This fall is not universal upon the coast: at Mombasah, for instance, it is generally deficient; upon the lines visited by the East African Expedition it extends regularly to Muhamma and Maroro in Usagara. The Myongo is an artificial, or rather a superstitious, style of reckoning prospective rain. If showers fall on the first day after the Nayruz, they are also predicted for the tenth day; if on the second day, they will fall on the twentieth; this decimalization is similarly prolonged till the tenth day from the beginning of the solar year. The "mvua ya ku pandia," or the "sowing rain," also called the "mwaka," or "year-rain," which the tiller of the ground anxiously expects, is that which separates the Vuli from the Masika; it begins on the 210th day after the Nayruz, and lasts 80 to 90 days, that is to say, from the 20th December to the 10th—20th March. It is at its height in December, and extends as far as Usagara, where it is frequently accompanied by strong easterly winds and a high electrical state of the atmosphere.†

Arabs and Africans are agreed that on the coast, as well as upon the island of Zanzibar, the rains have diminished since the country was disforested to make way for clove and other plantations,‡ whilst the Jezirah (Pemba Island) has preserved its pristine humidity. Formerly, at Zanzibar, during the rainy season, the people rarely left their houses, living on provisions stored up in the dry season: even the bazars were closed. The inevitable effect of decreased rain has been the increase of prices. The island, which formerly exported, must at present import rice, holcus, and other cereals. Fifty years ago the wali or governor of Zanzibar boasted that he could fill a "falij," or narrow canal, as far as the Jezirah with ghee; it now sells at 5 or 6 lbs. per dollar.

The reader will bear in mind that the island and the coast of

and Sailing Directions," p. 12, 6th ed.) that it refers to the revolution of the heavenly bodies round the great central sun Aleyon in the Pleiades.

* Storms of thunder and lightning are rare upon the island of Zanzibar; on the Mrima, however, they are sometimes violent, as in the Mozambique and the intertropical interior.

† Similarly at the Cape storms of thunder and lightning are rare; whereas, they are very frequent and violent in the mountain-chains lying to its north.

‡ As far as the present observations can be assumed, the annual fall of rain in

Zanzibar have double seasons, and, moreover, that considerable confusion reigns throughout the year. There is a great similarity between the atmospheric condition of the island, the shores, and the maritime regions, as far as the mountains which here represent the Eastern Ghauts of India. Beyond that point each region has its distinct meteorological phenomena, which will be noticed in turn.

Upon the coast the winds divide the year into two unequal portions : the north-east monsoon—called mosim* or azyab by the Arabs, and, by the Wasawahili and coast clans, kaskazi or kazkazi, commonly pronounced kizkazi—setting in from the end of November to the middle of December, blows strongly till the middle or the end of February. After this time it falls light, and sometimes fails altogether ; though at times it has lasted till nearly the end of March. The change—or rather the meeting of the equatorial atmospheric currents—is accompanied by storms, high gales, and heavy showers, which are often confounded with the real rainy season. In some years, as in 1858-9, the people complain that there is hardly any kaskazi ; at other times the wind sets chiefly from the N., the E., and the N.N.E., without, however, changing its name. The south-west monsoon, which, especially in the afternoon, as often

the town of Zanzibar, which, however, is dry compared to the interior of the island, amounts to about 12 feet. The observations registered are as follows :—

1853.	Total fall in Inches.	1857—continued.	Total fall in Inches.
March	5.34	March	6.60
April	18.34	April	18.80
May	24.03	May	9.80
June		June	2.21
July	1.38	July	6.30
November	11.80	August	6.77
December	7.90		
<hr/>			
1854.		1858.	
January	12.14 (?)	September	10.47
February	3.44	October	15.91
March	16.08 (?)	November	23.10
		December	13.59 (?)
<hr/>			
1857.		1859.	
January	3.67	January	8.06
February	2.99	February	19.19

These observations will be found to differ considerably from those made at Zanzibar during the year 1850 by a medical officer, under the direction of Lieut. Fergusson, H.M.I.N., and published by Colonel Sykes in vol. xxiii. of the Journal of the Royal Geographical Society. But the extreme variability of the climate, a phenomenon upon which the least critical observers agree, may account for the discrepancy. The maximum fall in the month of May is thus—24.03 inches. The minimum is in the month of June, in 1850, 0.55 inches; in 1853, 0.00 inches. The average discharge on the Western Coast of India, from Cape Comorin to Cutch, is about 9 feet.

* The mansim, mosim, or trading season, whence our "monsoon," at Zanzibar is considered to include the months of December, January, and February, when the ships arrive from Western India.

blows from the south-east—in fact, an undeflected trade-wind—sets in between the end of March and the middle of April, earlier in the southern and later in the northern parts of the coast; and though it often terminates in October, it sometimes continues till the conclusion of November. The Arabs reckon it from the 100th day after the Nayruz (= 6th January). They call it Kos, or Kaus (from the Arabic name of the sign Sagittarius); and in Kisawahili Kosi; amongst mariners, however, this term is appropriated to the stronger winds, lasting from April till the end of August; the weaker which follow them being known as "dayman," or daymani, from the Persian *dámán*, meaning the sheet of a sail. The east wind, which in these regions takes the form of a periodical sea-breeze, is termed matlai, and, by the Sawahili, *za ju*, "from above;" and the west wind, or land-breeze, *upepo mande*, the "dew-wind." Finally, the season of the greatest cold (June and July) is called *kipúpwe*. It would be vain to seek in these latitudes of little change synomyes for our spring, summer, autumn, and winter: even in India the terms must be borrowed from the Persians.

Considered as regards its sanitary condition, the climate of Eastern Equatorial Africa, though of too uniform a temperature and too deficient in cold to suit the European temperament, is superior to that of the Western Coast. As, however, in judging of the latter, popular opinion, founded upon the experiences of Sierra Leone, the Bight of Benin, and the delta of the Niger, has exaggerated the evil, so in the latter the prejudices entertained against it are based upon insufficient foundations. The awful loss of life amongst Captain Owen's crews, in 1821-26, appears exceptional,—it is evident from his pages* that the lancet destroyed more patients than the fever. The late Captain Hyde Parker, R.N., commanding H.B.M.'s brig *Pantaloons*, and his officers, after a fair experience of the rivers in the Mozambique, declare that, with common precautions, the climate is not unhealthy. In eighteen months on and off, the boat's crew of fourteen men had not more than two, and those mild, cases of fever.†

The principal endemic of the coast is fever, which appears to swallow up all other diseases. Of this African plague there are two types. The remittent, supposed to result from the action of a poisonous miasma upon an adynamic condition of the system, seems to increase in violence towards the south: it is more often fatal at Kilwa, for instance, than at Pangani, and in the Mozambique it is

* "Narrative of Voyages to Explore the Shores of Africa, Arabia, and Madagascar." The death of Mr. Forbes, to mention no others, appears to have been distinctly caused by bleeding, against which the Portuguese vainly protested (vol. ii., chap. 5).

† This information was given to Dr. Livingstone by Lt. A. H. Hoskins, R.N., and is quoted in "Journeys and Researches in South Africa," chap. 32.

even worse than at Kilwa. When malignant it resembles in a minor degree the "Yellow Jack" of the western coast, justifying Mr. Galton's remark,* "it is a matter of serious consideration whether any motives short of imperious duty could justify a person in braving a fever-stricken country." The intermittent type is a milder form than the bilious remittent: in India it would scarcely deserve the name of fever, yet in consequence of the debility and sensitiveness caused by an equatorial climate, which has no winter, it leaves the patient in an exceptional state of prostration.

The traveller in Eastern Africa is at first disposed to attribute the origin of this disease to the malaria produced by the joint effects of heat and humidity, acting upon the luxuriant vegetation that springs from a rich clayey and retentive soil. A longer experience modifies his views: it will be seen that fever is found in the dry plateau of Ugogo and in the parched champaigns of Unyamwezi, where the malaria is mysterious as that of Italy and Algeria, as well as in the marcescent valleys of Khutu and Ujiji. The corollary is that fevers are in these regions the natural expression of mortiferous influences generally—heat and cold, hunger and thirst, hardship, exposure, and fatigue.

The Arabs divide fever into two types: firstly, the "Hummah," in Kisawahili, "Humo," or the bilious remittent and the real intermittent fever and ague; secondly, the "Mukunguru," or seasoning fever. According to them, and the belief is justified by the experience of many hundred Indians settled upon the coast and by the greater part of the few European travellers who have visited it for any length of time, whenever a stranger enters new ground, he must undergo his mukunguru. Even Arabs who cross the narrow Zanzibar straits to Kaole or Bagamoyo expect an attack, and if they remove from one part to another they look for a second. The fever of Kilwa is most dreaded: it is said to attack the brain, and often to end fatally. Many Indians settled on that part of the coast suffer from it regularly twice or thrice a month. Generally the mukunguru is mild, and it is often preceded not by languor and lassitude, but by a remarkable sensation of well-being and elation of spirits. The ague fit rarely shakes the couch as in India, and the hot fit soon terminates in perspiration. Yet despite the apparent insignificance of the attack, a throbbing brain, an impaired appetite, nausea, general debility, and a weary insomnolency,† often succeeded by days of torpor and apathy, await the patient when the malady has passed away.

* 'The Art of Travel,' by Francis Galton, Esq., F.R.G.S.

† Strangers at Zanzibar often complain of insomnia during the first few months. This extreme is generally followed by the other, and the normal action of the climate is rather torpor than nervous irritability. The Arabs remark the same of the climate of Unyamwezi, and assert that it greatly predisposes to corpulence, a proof, it may be remarked, that it does not disagree with them.

The much talked-of acclimatization appears doubtful ; every fresh attack weakening the system, paves the way for a successor. The consequences of protracted or repeated fevers are severe derangements of the system : these sequelæ, which the Arabs, who greatly dread them, call "El Nazlah," or the defluxion of humours, are either visceral or cerebral. The liver, in its efforts to purify the blood, secretes bile in superabundance ; hence indigestion and its concomitants, enlargement of the spleen and swellings of the stomach and lower extremities, irritability, hemicrania, liver-coughs, tooth-aches, and painful cramps or spasms, showing entire derangement of the nervous system. The severest cases often end in the loss of one or more senses—idioey, blindness occasioned by atony of the optic nerve, loss of virility, stiff joints, contracted sinews and a partial paralysis of the extremities, which is sometimes inveterately lingering. The signs of convalescence recognised by the natives are severe ulcerations of the mouth and tongue, fever-sores and herpetic eruptions, especially upon the lips, sluggish boils, and painful eruptions. Amongst the latter is the nyongo, the pitam of Western India. The attack lasts from five to ten days, during which the patient suffers great pain : his face, hands, and feet swell, and his skin is red and fiery, as if with erysipelas. The Arabs cure it by frequent batheings with cold water, in which copper has been rubbed down.

This typhoid fever appears to defy the usual preventives of sleeping between fires, of wearing gauze-guards over the mouth, and others enumerated by travellers. It is differently treated by all races. The Banyans (Hindus) rely upon starvation and diet ; some few use opium. The Indian Kojahs and the Arabs apply their usual variety of simples and nostrums, especially fumigation and steaming, as preventives. Some Europeans at Zanzibar use quinine before the springs, that is to say, before the new and the full moon—an ancient superstition in the East—and employ cathartics or emetics on all occasions when sudden and severe exercise, following a long rest, induces biliousness. The French mostly affect quinine, which, being taken without due precaution, has caused many deaths. The Delagoans treat the disease with cold affusions and diaphoresis. The Portuguese of the Mozambique, who certainly have profited by length of experience, begin with mild emetics, followed by tonics, principally bark and bitter herbs. They induce profuse perspirations by vapour-baths and draughts of hot kanji, or rice-water. They insist upon the strictest diet : eggs, butter-milk, and stimulants are proscribed till the stomach regains strength to resume its accustomed functions. A little bread and tea or rice-water, and two small slices of "roti," are allowed, much strong meat being considered dangerous as strong drink. The Portuguese and the Arabs account bleeding most pernicious, and

justly so, as the action of the heart cannot be restored. It may be added that in obstinate fevers the *Tinetura Warburgii* has been found a specific: it was tested at Zanzibar by Lieutenant-Colonel Hamerton, whose doors were sometimes blockaded by the Persian attendants of the Prince clamouring for the "cure of death."

The other diseases of the coast are small-pox brought from the interior, dysentery,—the scourge of caravans as of camps and ships,—abdominal hernia, elephantiasis, pleurisis, and pelagra. The baras, or white leprosy, commonly appears upon the shins and arm-bones: it commences with violent prurigo, after which the skin changes colour, and, except in rare cases, it does not return to its normal hue. Strangers are liable to this disease. The Arabs speak of juzam, or black leprosy; but it was not observed on the coast. Hydrocele and sarcocoele are less general than at Zanzibar. Boils and blains are common and painful, and at Mombasah and other places sores and ulcers, called by the Arabs Kinah, and by the Sawahili Mti, Donda, Kidonda, and Kibata, are but little less terrible than those of Aden and Yemen. They attack the legs, generally the shins near the ankles, swell the limbs into a semblance of elephantiasis, and end by causing distortion of the bone and lameness: the toes are often almost obliterated. Even the Arab traders passing through the country sometimes suffer from them.

The number of rivers on the Zanzibar coast has been greatly exaggerated: creeks or sea-arms, like the "Tuaca or Nash River" of Mombasah, the "Quavi or Cuavo" of Kilwa, and the "Lindi River" near Cape Delgado, have been raised to the rank of large perennial streams. On the other hand, Captain Owen omits all notice of the great Rufiji River, which first appeared in the 'Observations sur la Côte de Zanguebar,' by M. Saulnier de Mondevit, Lieutenant de Vaisseau, under the name of Oufidgy.* The 'Mombas Mission Map' also altogether ignores the Kingani River, which is constantly navigated for some distance by the Wamrima or coast clans.

According to that law of nature which renders the streams in the southern hemisphere inferior in volume to those north of the equator, from Mombasah to Kilwa, the coast, which is everywhere cut by runnels and rivulets, presents but three debouchments that deserve the name of rivers: these are the Pangani, the Kingani, and the Rufiji. They are by no means the sluggish and stagnant streams which infect the air of the western coast. They pour from high inland mountains through deep channels to the sea, and but for the "fungu," or bars of rock and sand which mark their junction with salt water, they might be entered at all times by the larger craft, which must now float in with the high tide. In 1824 the

* See Cha xi.

Pangani had 2 fathoms of water over the bar; now the fairway passage is not more than 7·50 feet deep, and when a gale blows from the east, it is faced with a line of bar-breakers. The coast, moreover, is garnished with "diabolitos" or outliers, little black rocks of a siliceous gravelly conglomerate. Native craft can ride at anchor in these three rivers, and, as in Western Africa, the prevailing winds blowing up the channels enable the mariner to stem the velocity of the current.

The Pangani, which was explored in 1824 at the expense of life by Lieutenant Reitz, attached to Captain Owen's survey, has been so frequently visited, that it has now lost all interest. About 30 miles south of its embouchure, near the town of Saadani, flows a little perennial stream, called the Gama, a mere fillet of water in the dry season, and nearly absorbed by the deep loose sand of the bed. Rising in the highlands of Nguru or Ngu, at a distance of about ten days' march from the coast, and draining the countries between the Pangani and the Kingani Rivers, it bifurcates near the sea, forming a diminutive delta.*

The mouth of the Kingani River,† which lies in s. lat. 6° 15', is situated north of a point of land projecting seawards beyond the coast-town of Bagamoyo. The estuary is about half a mile broad, and the adjacent mud-banks are flooded by the high tides: the bed narrows after 2 or 3 miles to 100 yards. In appearance the Kingani contrasts strongly with the Pangani River: its low banks, instead of huge palms and massive vegetation, bear only stunted bushes and a few mangroves; its waters, moreover, are of a muddy tawny colour, verging upon red, soft and sweet as if fed by rain, whereas its neighbours appear of a slaty white hue, and have, moreover, the harsh rough taste of rock-streams and snow-water. Concerning the upper bed of the Kingani River, details will appear in a future page.

From its volume and extent, the Rufiji River‡ is the most in-

* These details rest upon the authority of Arab information.

† Mr. Cooley ('Memoir on the Geography of Nyassi,' p. 22, which appeared in the 'Journal of the Royal Geographical Society,' vol. xv., of 1845) asserts that "the Kingani means *bar* river; the stream, though large, is quite inaccessible to trade." If the latter clause be correct, it has changed of late years. The name is derived by the people from Kingá, a fire brand; they connect it with the legend of a celebrated chief in the olden time. Moreover, Mr. Cooley (in 'Inner Africa Laid Open,' p. 80) thus confounds the Kingani with the Pangani river:—"We know, on unquestionable evidence, that the mouth of the Ruvú is in lat. 6° 15' s.—fifty nautical miles south of the Pangani." Although Ruvú (Ruvu) is to a certain extent a generic term for a river, it is frequently applied to the Pangani, but rarely to the Kingani.

‡ Mr. Cooley ('Geography of Ngami,' p. 20) remarks, that "The Sawahili in general say Rivuma and Rufiji. The inland nations and the Arabs substitute L for the initial R." In most dialects of the eastern branch of the great South African family of languages, however, the liquids L and R are interchangeable. In Kisawahili, the Lingua Franca of these regions, Arabs and the more civilized speakers rightly distinguish between the two when there is a difference of sense;

teresting feature in the potamology of the Mrima. It is still involved in some mystery, and nothing beyond a brief description drawn from the accounts of ignorant natives has yet been given to the world. Like the Zambezi and unlike the Nile, this main drain of the Zanzibar coast swells under the pressure of heavy rains in the interior from January or February till May and June.* According to the pilots, its delta is cut by eleven or twelve distinct branches, of which one only admits Arab sailing craft, though several can be ascended by canoes. The "Rubbans" point to the low mangrove bank, a breach in the ancient sea-beach opposite, and due west of the Kisimani Mafiyah, or the watering-pits of Monfia island, which lie in s. lat. $7^{\circ} 56' 41''$. Boats ascend the stream till the swollen outfall becomes too rapid :—this point is placed at the distance of seven days,—and, during the inundation, they row from village to village. The settlements are raised upon piles or poles, beyond the reach of the waters and the crocodiles. The tribes adjoining the Rufiji are barbarous and exclusive: their sultans or chiefs must be conciliated by presents, and, if not in force, the traveller will incur the risk of being plundered. The Rufiji, as is afterwards explained, becomes in its upper course the Rwaha River. The exploration of the delta of this great river is, like the outlet of the Juba on the northern part of the coast, still a desideratum. The

where such is not the case they prefer the R. Thus Major Gaminho ('O Munta Cazembe. Introduçao,' p. xxii) says, "Advertei porém que os Muizas e os Cazembes ou Lendas não pronuntia a letra R, em cujo logar usam do L." The slaves, on the other hand, and the barbarians of the interior, convert R into L, and appear indeed so fond of the latter letter, that they will prefix and infix it ad libitum. As, however, they have no standard, and the Arabs have, the civilized pronunciation will invariably be retained in these pages, though it is not contended that it is the more correct. To this general rule there are, of course, exceptions: the Arabs, for instance, name their ancient emporium Kilwá, whence the Portuguese Quiloa; the Africans, on the other hand, call it Kirwá. It is impossible not to remark the recurrence of the syllable Ru or Lu as an initial in the names of East African rivers; for two instances of many, the Rusizi and the Ruguru; by addition of a syllable it becomes a modification of Rufu or Lufu, as in Rufiji, Rufuma (Livuma), Rufuta, and Rufita. A glance at the map will show that the same formation extends to Western Africa, always bearing in mind that the interior barbarians prefer Lu and Lufu to Ru and Rufu. The Arabs explain the fundamental idea of the word to be that of destruction, *soil*, by water. In the Kisawahili, and most of its Zangian cognates, Kū Fá, or by a normal increment Ku Kufá, signifies to die, a word which brings to mind the لف (he died) of the Arabic.

* According to Dr. Livingstone (chap. 26), the Leeambaye, which proved to be the upper stream of the Zambezi, floods in July and August, a little before the period of inundation in the various streams which unite to form the Niger. On the other hand, the principal African rivers of the southern hemisphere, the Zambezi and the Rufiji, inundate in February, March, and April; on the course of the Upper Nile the rains last from March till November. Thus it appears certain that the same cause, namely, the northing and southing of the sun, which attracts the mass of vapour derived from the ocean reservoirs around, produces opposite results, modified by local features of ground, according to the position of the several streams with respect to the equator.

barbarous tribes conciliated, this river might be made one of the great gates for commerce into Eastern Africa.

The Mrima is no exception to the general rule of the country; it contains many settlements, but not a single town. "Oppidulis praecepsit." A chain of little hamlets, which, when near-neighbours, are comprised under a single comprehensive name, although each is distinguished by its own appellation, girds the broken line of point, inlet, and estuary. Between Bagamoyo and Kaole, a distance of 3 miles, there are nearly a dozen. The traveller wonders that men do not combine to build a city which might insure safety, comfort, and society. The unconstructive African, however, loves his hut, and has a superstitious horror of stone walls; moreover, the exigencies of commerce, as will presently be explained, tend to disperse the population.

The principal settlements, in their order from Pangani southward, are the following:—At the distance of a few miles lies the roadstead of Kipumbui; here the approach is rendered perilous by the "diabolitos," which are 2 miles distant from the coast, and are steep-to, giving no soundings at 60 fathoms.* Beyond Kipumbui, and bearing north-west from Zanzibar town, lies Saadani, the principal port of the ancient "kingdom of Atondo." This is the Portuguese corruption of Utondwe, a point or headland bounding the bay, and still showing vestiges of habitations; moreover the people of Saadani are still called Watondwe.† Saadani was lately burnt to the ground by Mohammed, the headman of Marumbi, a petty village distant about 3 miles, during the absence of his cousin "Bori," who is considered the bravest and is respected as the most powerful diwan or chief of the Mrima. South of Saadani lies Whinde, a settlement whose well-armed inhabitants have earned for themselves an infamous celebrity as kidnappers; assisted by Kisabengo, a Mzegura robber-chief of Ukami, an inner district, they can raise from 300 to 400 muskets, and they have wasted with fire and sword the fairest provinces of Usagara. Bagamoyo (in s. lat. $6^{\circ} 17'$) is one of the great points of departure for the caravans trading to Unyamwezi; it is garrisoned, as well as its neighbour Kaole, by a small body of Baloch. South of Bagamoyo lies Konduchi, in s. lat. $6^{\circ} 40' 24''$: numerous small settlements, of which the principal are Msasani, Mzizima, Magogoni, and Mbezi, prolong the line of copal depôts to the great centre of the Mrima traffic, Mbuamaji, commonly called Boromaji, in s. lat. $6^{\circ} 51' 49''$. From Mbuamaji to the

* This is given upon the authority of the late Lieut.-Col. Hamerton. Kipumbui was not visited by the Expedition.

† According to Mr. Cooley ('Geography of N'yassi,' p. 22), the banks in front of the Kingani River are called Watondui, or the *picking-grounds*; i.e., the banks for gathering shell fish. This derivation is not confirmed by the people of the country; moreover, the form "Watondui" would be a personal plural, not a locative noun.

delta of the Rufiji the coast-line is thickly populated, but the villages are too small to deserve mention.

The settlements on the Mrima are apparently of modern date. The Arab geographers preceding the Portuguese conquest mention only five towns on the whole coast between Makdishi and Kilwa, namely, Lamu, Brava, Marka, Malindi, and Mombasah; in Captain Owen's charts (sheet No. 10), between Pangani and the parallel of Mafiyah not a name appears. The position invariably chosen is the seaward edge of the maritime plain, instead of the elevated beach, where pure air and water are procurable. From a distance they appear to the mariner either embosomed in a luxuriant growth of vegetation or peeping from behind a wave of snowy sand which parts the blue tides from the bright green plain; and the vicinity of a settlement is always known, even when built far inland to escape the springs, by a foreground of tall cocos, whose fibrous roots cannot prop them straight in defiance of the gale, and by a background of undulating hill cleared for the growth of cereals. Often built behind the sandy dunes, they are rendered uncomfortably close by the exclusion of the daily sea-breeze, which alone can temper the fiery oppressive heat, and they are exposed to the "dew winds," the malarious night-breezes, which are dangerously chilled by the low lands and the lagoons behind them. Some places are surrounded by a dense growth of jungle, matted with cord-like creepers, which the people call their fort, flying into it when attacked. In most settlements the water is brackish and nauseous; the pure element is to be procured by digging in the beds of nullahs, but these being generally at some distance are left undisturbed.

The largest of these settlements may contain half a dozen houses and two or three mosques of lime and coralline; the abodes of the principal inhabitants are single-storied, with offices below; the favourite apartment is a long upper room, with reeky rafters and rocky uneven floor, which opens upon a chunamed terrace, where the inmates sleep under a bandani or "boothy" of coco-leaves.* Some villages have a vestige of walls and attempts at stockades; when garrisoned by Baloch mercenaries, they boast of a "gurayza,"†—a dwarf square of masonry, with store-rooms below, and above a crenellated flat roof for matchlock-men. Few of these settlements contain bazars, or even regular streets; the open spaces between the houses are cumbered with piles

* This Bandani reminds the Biblical reader of the "booths" made during the Feast of Tabernacles and the "booths on the roof of the house" of Nehemiah, chap. 8, v. 15.

† The word *gurayza*, used by the Arabs of Zanzibar, but unintelligible to those of Western Arabia, is clearly derived from the Portuguese *igreja*, a church. These holy places being solidly built, and placed in commanding positions, were thus utilized by the conquerors.

of rubbish, and sometimes show remains of old walls and graves : a few showers make their mud ankle-deep, and it must be steamed off by the sun-blaze. The mass of the village consists of pent-houses, hovels, and round haycock huts—the characteristic African abodes. The more comfortable are large claret-chests of wattle and dab, divided into three or more compartments by short walls, and defended by heavy plank doors secured by coarse hooks and chains. The largest timber is the bordi or mangrove rafter.* The flying thatch-roof is so placed that, though windows are unknown, the interior enjoys constant ventilation : the material is the jauli, or small squares of coco-leaves, fastened to short rods, which are usually splittings of the midrib.† Under the long and projecting eaves, resting upon strong posts, are two raised earth-benches divided by the entrance to the doorway, and garnished with matting ; they form the only shops and sitting-rooms of the Mrima. Some houses have a second story like a ship's bunk, a partial planking supported on rafters and used as a dormitory : each has its compound, barton, or court-yard, of holcus-straw and reeds, containing a few cocos, and serving as a retreat for the women where they may pursue their domestic avocations unobserved. In still weather these houses, with closed doors, are almost unendurable to a European ; the people, however, fearing thieves and wild beasts, never fail to lock themselves in at night. The barbarous round huts are exceedingly close, and swarm with vermin. The furniture is confined to matting, and sometimes a dwarf rug, a kitanda or cartel of the roughest construction, with an African stool or an Indian chair, and a few pots and gourds.

These settlements are for the most part well supplied with the necessities of life. The low land around, when not salted by the tides, and the elevated sea-beach are laid out in plantations of cereals, as rice, holcus, maize, and bajri (*Panicum spicatum*, Roxb.), and of pulses, turiyan (*Cajanus Indicus*), mung (*Phaseolus mungo*, Roxb.), ground nuts, and the *Voandzeia subterranea*. The vegetables are muhogó, or white manioc, cucumbers, gourds, sweet potatoes, and beans of several varieties ; betel pepper‡ and tobacco

* The Mukanda'a or mangrove, called by Bruce the rack-tree, and by Salt *Avicennia tomentosa*, a species of sapindus, is the common growth on tropical shores, to which Pliny thus alludes :—" In Mari vero Rubro sylvas vivere, laurum maxime et olivam ferentem buccas." The laurus, as has appeared, is probably a species of almond. Mangrove timber easily decays; indeed, the climate of East Africa, with its alternate extremes of wet weather, dry winds, and scorching suns, is fatal to almost every growth, making it after a time brittle as old whalebone.

† Jauli is the Indian word ; the Sawahili call them simply ukuti wá mnázi, —coco foliage.

‡ The betel pepper, called mtámbú, from the Arabic tambúl, resembles the piper betel, or betel vine of India ; the fleshy and pungent leaf is much praised by the Banyans settled upon the coast. This plant may be found in Uzaramo trained

abound; and the fruits, which, with the exception of the coco,* and the hard, tasteless water-melon, are little valued, grow almost wild, and are never propagated by cuttings. Fish is cheap and good; the boats set out, in fine weather only, about sunrise and return late in the afternoon. Cattle do not exist everywhere upon the coast, but all the villages are rich in poultry and goats. Grain is brought in from the interior by the wild people after the great rains, or about the month of June; at other times they barter for it their supplies of copal. Holcus is the currency in most of these settlements, a very fluctuating measure being considered an equivalent to a cotton cloth. Dollars, however, are now becoming favourites with all the coast clans.

The fringe of Moslem negroids inhabiting the Mrima is called by the Arabs Ahl Maraim, by themselves Watu wa Mrima abbreviated to Wamrima †—“Coast Clans.” The heathen of the interior are designated in mass Washenzi, or the conquered; this, properly the name of the servile or helot race subject to the despot Kim-were in Usumbara, has been ignorantly extended by foreigners to all the inhabitants of the interior. The Wasawahili, or Sawahili races, mulattos, originally African, but semiticised like the Moplahs of Malabar by Yemeni or Omani blood, are confined to the lands north of Pangani, to the island of Zanzibar, and to the regions about Kilwa. South of Mbuamaji the people are called Wátú

to a pole, or to the trunk of a tree; it is chiefly used by the heathen in their magical ceremonies. As a succedaneum for betel, the people of the interior reddens their mouths with the leaf of a wild tree called mdunduru goma.

* The coco, it will be seen, flourishes along the maritime valley as far as the eastern ghauts of Africa. According to the Africans, it puts forth every month young fruit, which requires a year to ripen; the total yield of the tree may be estimated by the number of nuts upon it; one dozen appearing at a time, for instance, give an annual growth of 144, or thereabouts. The Indians declare from tradition that 1000 and even 1200 nuts have been produced in the course of a year by a single tree, though from forty to fifty may be assumed as an average. The principal uses of the coco are in cookery, in rope-making, and in making “jauli.”

† It must be borne in mind, that, in the Kisawahili and its cognates, the vowel *u* prefixed to a root, which, however, is never used without some prefix, denotes, through a primary idea of causality, a country or region, as Uzaramo, the region of Zaramo. Many names, however, exceptionally omit this letter, as Khutu, Fuga, and Karangwah. The liquid *m*, or, before a vowel and an aspirated *h*, *mh*, to prevent hiatus, being probably a synaeresis of *Mtu*, a man, denotes the individual, as Mzaramo, a man or woman of Zaramo. When prefixed to the names of trees, as has been instanced, it is evidently an abbreviation of *Mti*, a tree. The plural form of *m* and *mw* is *Wá*, a contraction of *Watu*, men, people; it is used to signify the population, as Wazaramo, the people or tribe of Zaramo, Wasawahili (with a long accent upon the penultimate, consonant with the spirit of the African language, and contrary to that of the Arabic), the population of the Sawahil. Finally, the syllable *ki*—prefixed to the theo-ethical root—denotes anything appertaining to a country, as the terminating *ish* in the word English. It especially refers in popular usage to language, as Kizaramo, the language of Uzaramo; Kisawahili, the language of the Sawahil, originally called Ki-ngozi, from the district of Ngozi, on the Ozi River. It has been deemed advisable to retain these terse and concise distinctions, which, if abandoned, would necessitate a weary redundancy of words.

wá Rufiji or Wárufiji—the “Rufiji Clans.” As proved by their languages, which differ only in minutiae of grammar and vocabulary, all these races are cognate. It has long been established that, from the Equator to Kafirland, the hundred dialects are the lineal offspring of a single mother tongue: the Kisawahili and its immediate congeners, sensibly called by Mr. Cooley* the Zangian languages, are the eastern branch of this great family.

From the earliest times, emigrants were tempted to exchange their homes in barren Mángá,† for the Sawahil, or maritime regions of East Africa, where scanty toil produces the amplest return. History retains vague traditions of colonization in Zanzibar by the people of Yemen and Hazramaut, in heathen or pre-Islamic ages. The anonymous author of the *Periplus of the Erythrean Sea* (A.D. 64–210) asserts that the coast about Rhapta, which is usually translated Kilwa, was governed by an ancient right —κατά τι δίκαιον ἀρχαῖον—by Cholaibus (Kulayb), the tyrant or chief of Mapharitis or Mophareites, in Yemen, and that it had been colonized by the people of Muza (Mauza, near the modern Mokha). El Islam was introduced into the country by Walid bin Abd el Malik bin Marwan, the 12th Ommiad, in about A.H. 86—A.D. 705. According to Ramusio (vol. i., *Delle Navigazioni et Viaggi*, chap. iv., *Della Historia del Signor Giovan de Barros*) “Zanzibar was first colonized by Arab bandits (Bedouins?) who became Moslems, and were called Emozaydi, or subjects of Zayde, from a man who was a nephew of Hocem (Hasan), son of Ali, nephew of Mohammed, and married to his daughter Axa (!)‡ These men built no notable habitations, contenting themselves with protection against the Kafirs or aborigines. The plague of immigration continued until there arrived a great number of Arabs, in three ships, under seven brothers, who, on account of the persecutions of the king of Lacah or Lacha (the Shaykh of El Hasa ?), a city distant 40 leagues from the island of Baharem (Bahrayn), fled to Ain (Ajan, or Azania §), where they first built Magadexo, and afterwards Brava, which is still governed, after a republican fashion, by

* Dr. Krapf afterwards attempted to give them the name of the Nilotic tongues—an elaborate misnomer.

† The Wasawahili, like the Somal, have vernacular appellations for the principal localities in and about their country, as Unguja for the island and town of Zanzibar, Mvita for Mombasah, and Manga (which literally means a rock or stone) for Arabia. Father Francisco, the companion of Dr. Lacerda, says that the Cazembe always called the land of the Muzungus (or white men) “Manga” (Mr. Cooley’s ‘Inner Africa Laid Open,’ p. 61).

‡ Ayisha, the wife, is here confounded with Fatimah, the daughter of the Prophet.

§ The origin of “Azania” is probably to be found in the Arabic name of the country, “Barr el Khazain,” or El Khazain, the “land of reservoirs,” which extends from Ras Hafun in about 10° N. lat., to Ras el Khayl in 7° 46' 30" N. lat.

twelve headmen, descended from the seven brothers. But the Emozaydes being of a different faith,* would not submit to the new comers, and retired into the interior, uniting themselves with the Kafirs by marriage and manners."† Vincent (*Periplus*, vol. ii. chap. 28), who also derives his information from the "Kilwa Chronicle" and De Barros, divides the Arab immigration into two epochs,—that of the Zaydes, or Emozaydes,—Shiah heretics from Yemen, who dispossessed their heathen brethren settled in East Africa far before the time of the *Periplus*, and subsequently that of "a Sonnite tribe from Baca, in the Gulf of Persia, near Bahrein, which, to judge from Niebuhr, ought to be of the tribe Beni Houle, in Oman." According to the *Decades* of De Barros (1st of Asia, lib. viii. chap. 4, 5, quoted by M. Guillain, Vol. I.), there reigned at Shiraz, in South Persia, in A.H. 400 = A.D. 1009, a sultan Hasan, who left six sons by a princess of his own race, and one—Ali—by an Abyssinian slave. The latter, despised by his brethren, fled, carrying his wife, family, and followers in two ships to the coast of Zanzibar; but, quarrelling with the Arabs of a different faith, he pursued his course to the island of Kilwa, which he bought for its price in cloth. He here built fortifications against the heathen, and the Moslems of Songo and "Changa, which extended to Mompana."‡ By degrees his descendants conquered the adjacent countries, and his dynasty reigned at Kilwa until A.H. 906 = A.D. 1500.

These legends are still preserved by oral tradition. The people also relate that, when the great caliph Harun el Rashid had reduced Oman, in A.H. 193 = A.D. 809, he gave the island of Zanzibar, which was then subject to Oman, as an appanage to his wife, the lady Zubaydah. They add that Harun, whilst preparing to visit Africa, was seized with mortal sickness, and died on board

* The Emozaydes were doubtless sectarians of the school of Zayd bin Zayn el Abidin, the great-grandson of the Caliph Ali, who being raised to the caliphate by a revolt of the people of Kufah in the days of Hisham bin Abd el Malik, the Ommiad, in A.H. 122=A.D. 739, was defeated and slain. The pretender's son, Yahya, fled to Khorasan, where the Abbasides were beginning successfully to oppose the Ommiad dynasty. But the tenets of Zayd spread throughout Yemen, where they formed, in after ages, a powerful and influential class. The colony from El Hasa, whose present faith is that of El Shafei, were probably Sunni, which would account for the flight of the Zaydi schismatics.

† This is, perhaps, the only tradition current in the western world concerning the origin of the Kafir tribes. The modern African traveller still hears legends of these Arab Kafirs, but, like the city of brass, they seem to have become invisible. Dr. Livingstone alludes to the tradition in his 32nd chapter. The people of Kilwa declare that heathen Arabs exist in the interior, but they cannot say exactly where. Mr. Cooley, the highest modern authority, considers the legend of the Arabs as a "superficial surmise, incapable of historical evidence."

‡ This Songo may be either the island of Songo-Songo, situated between Kilwa and Mafiyah (Monifi), or that of Songo-Mnára, the "Minaret of Songo," so called from its peculiar mosque, whose ruins are still shown to travellers. "Changa" is probably another of the same group, now termed "Sánje Majoma."

ship, thus accounting for the fact that his tomb is unknown unto this day.* As regards the immigration of the Wagemu (Ajemi, or Persians), from whom the ruling tribe of the Wasawahili derives its name, they relate that several Shaykhs or elders from Shiraz, emigrated to Shangaya,† a district near the Ozi River, and founded the town of Malindi (Melinda). Thence, dispersing southwards, they landed at Kilwa Island, under a chief named Yúsuf, who bought from Nápundu, the sultan of the Wahao tribe, then Lords of the Isles, as much ground as he could strew with cloth. He ended by marrying the heathen's daughter, and, after the fashion of Easterns, by murdering his father-in-law. To him are ascribed the extensive remains of fort and palace upon the now almost deserted islet of Kilwa.†

The history of Eastern Africa in more modern days has little interest. The coast was conquered by the Portuguese, and reduced to a province, in the earlier part of the sixteenth century. They were expelled or massacred, in 1698, by the armament of the lord of Oman, Sayf bin el Imam Malik el Yurabi, a

* Arab history, however, declares that the great Abbaside rests at Mash'had, near the dust of Imam Reza, and the dream which presaged his death in the land of red earth is told by many chroniclers.

† According to a learned Shaykh of Mombasah, the Washangaya still dwell near the Ozi River; he quoted a popular rhyme of the boatmen. One sings:—

Bána Bakkari	i.e.,	Mr. Bekkari (Abubekr)
Ufilipe mái		Is drowned in the river;

And the chorus replies,—

Ufile Nyáruwwa.	i.e.,	Drowned in Nyarawwa,
Mtoní Shangaya		In Shangaya's stream.

Other travellers place "Shangaya" about 20 miles n.w. of Patta.

‡ The island of Kilwa must not be confounded with the continental district bearing that name. In Horsburgh's 'Indian Directory,' under the head of Keerwa or Keelwa, we read, "Respecting the name Quilon, Capt. Owen remarks that, by its literal enunciation to some Arab pilots, they took the Barracouta to Tikiéwry, instead of Keelwa, from which it must be seen how important it is not only to give true names, but the true pronunciation of them."

As has been explained, Kílwá would be also pronounced Kirwá. But, when Capt. Owen directed his Arab pilots to Kilwa, he intended the original settlement on the island, in S. lat. $8^{\circ} 57' 12''$. They, on the other hand, took him to the modern Kilwa, a bay or bight on the mainland, in S. lat. $8^{\circ} 42' 59''$, or 12.25 miles north of the island. This bay is backed by a district called Kilwa generally, but the settlements composing it are distinguished by particular names, as Kiwinjya the principal, Tukwiri (Tekewery), Majinjera (Mazingia of Mr. Cooley), Kivafi (Cuavo?), Ugoga, and Mayungi-Yungi. Thus, also, must be explained Mr. Cooley's remark ('Geography of Nyassi,' p. 20 note) "There are at least five places called Kilwa, viz., K. Majinjera, which is the island commonly known as Kilwa (N.B., the island is known as Kilwa Kisimani, and Majinjera is a settlement in the north part of Kilwa Bay); Kilwa Kevingi, or Old Kilwa, a village on the coast, a few miles north of the island (N.B., Kiwinjya is not Old Kilwa, it dates from the time when the people of the island fled from the late Sayyid Said of Maskat, and lies nearly at the bottom of the bay), K. Cuavi (Kivafi), K. Ugogo (Ugoga), and K. Tekiri (Tukwiri), the last south of the island, on a part of the coast remarkable for the number of wild beasts infesting it." (N.B.—Tekiri, generally called Tukwiri, adjoins Kiwinjya on the south, forming almost the same settlement. It is, therefore, about a dozen miles north of the island.)

branch of the great Hinawi tribe. Having conciliated the rival Ghafiri, he established in East Africa many of his dependants, belonging to the Nabhani, the Ghasásinah, the Hawátimah, and the Hamdáni clans, whose descendants are still settled in the country. They bought slave-girls, built houses, cleared the lands, and gave up the thought of returning to their homes in the barren and burning North. Their children abandoned the father's for the mother's tongue,* and the mixture of blood produced a race of genuine mulattoes, like the Bastaards of South Africa. Thus within historic ages, for nearly 1800 years, the East African has been crossed with Asiatic blood, whereas, on the western coast, the mingling of races does not exceed 350 years, and the climate has rendered it almost nugatory. This fact must be borne in mind when considering the difference of physiology between the Negro and the Negroid. In the present day the Eastern race is still Semiticised by stragglers from Arabia, and Africanized by the importation of slaves from the interior: to the latter element it probably owes its permanency.

The Mrima, then, is peopled by two distinct but anciently connected families,—the half-caste Arabs and the Coast Clans. The former are generally of the Bayazi (Abazi) or Khariji persuasion; the latter belong to the Shafei school; both, though the most imperfect of Moslems, are sufficiently fanatic to be dangerous. Virtually independent, they own a nominal allegiance to the sultan of Zanzibar, yet they are free spoken and independent as Bedouins when removed a few miles from the coast; and they have a great aversion to the officials of Government, whom they consider their personal enemies. When beyond the reach of jurisdiction they are jealous, haughty, and violent, envious, and calumniating towards their fellow-citizens. Between them and the pure Arabs, who often traverse, but who now never settle upon the coast, there is a repugnance, increased by commercial rivalry, and they lose no opportunities to thwart and discourage strangers from travelling into the interior. Like their ancestors, they hate Europeans, and especially fear the Beni Nar, or Sons of Fire,—the English. "Hot as the Ingrez," is in these lands a proverb: only interest reconciles this people to intercourse with the hated and despised "Muzungu,"†

* There is a peculiarity of attraction to strangers in Kisawahili, probably the fluency and the facility with which it is articulated. The half-caste Arabs can scarcely speak any other language, and even the Baloch and the Banyans after a long stay seem almost to forget for it their mother tongues. Almost all Asiatics are heaven-born linguists; after a few months they find themselves at home in Kisawahili. Consequently it is no objection to the Arab origin of the Kafir tribes that they speak a South African dialect.

† Throughout Eastern Africa, Muzungu, a word synonymous with learning or knowledge, is used to signify the "white man" generally. Wazungu is the plural, and Uzungu is the land of the white man. The more civilized Sawahili call Europe, as in India, Wiláyat. The people of the interior ignore this Arabic expression.

and in their many Riwayát, Hadisi, and Ngoma—traditions, tales, and songs—they predict the downfall of the country that has once been trodden by the white man's foot. They have a certain amount of clannish pride; many families—the Beni Kindi, for instance—retain noble Arab names.

The half-caste Arab is degenerate in body and mind; the third generation becomes as truly negroid as the inner heathen. Even Creoles of pure blood, born upon the island and the coast of Zanzibar, lose the high nervous temperament that marks their ancestors, and become, like Banyans, pulpy and lymphatic. These mestizos appearing in the land of their grandsires have incurred the risk of being sold as slaves. The characteristic of their physiognomy is the fine Semitic development of the upper face, including the nose and nostrils, whilst the jaw is prognathous; the lips are tumid and everted, and the chin is weak and retreating. The cranium is somewhat more rounded than, and wants the length of, the negroid skull. A peculiarity in the maritime population is the white beard, contrasting strangely with the thick black hair: the people attribute it to the action of sea-water. Idle and debauched, though intelligent and cunning, the coast Arab has little education. He is sent at the age of seven to school, where in two or three years he accomplishes the Khitmah, or perfection of the Koran, and he learns to write a note in an antiquated character—somewhat more imperfect than the Cufic—which he applies to the Kisawahili. As nothing can be less fitted for the Hamitic tongues than the Arabic syllabarium, so admirably adapted to its proper sphere, his compositions require the deciphering of an expert. A few prayers and hymns conclude the list of his acquirements: his mother-tongue knows no books except short treatises on Bao, or geomancy, and specimens of African proverbial wisdom.* He then begins life by aiding his father in the shop or the plantation, and by giving himself up to intrigue and low debauchery. After suffering severely from his excesses—in this climate no constitution can bear up against over-indulgence—at the age of 17 or 18 he takes unto himself a wife. Estranged from the land of his forefathers, he rarely visits Zanzibar, where the restraints of semi-civilization, the decencies of Moslem society, and the low estimation in which the black skin is held, weary and irritate him. His point of honour seems to consist chiefly in wearing publicly a turban, and the long yellow shirt called el dishdashah, in token of his Arab descent.

The Wamrima or coast people resemble, even more than the

* Of these some are tersely expressed, and not deficient in sly humour. A favourite saying is, "Khabari ya mbhali—News from afar," i.e. a monstrous exaggeration. "Leo Kabli ya Kesho—To-day is before to-morrow," means that procrastination is the thief of time. "Matikiti na matango ndio ki poneo (njá)—(Vile things like) water-melons and cucumbers heal hunger," i.e., On a souuent besoin d'un plus petit que soi.

coast Arabs, their congeners, the Washenzi, or the inner barbarians. Pure Arabs will not acknowledge them as cognates, declaring the race to be Aajam or Gentiles. They are even less educated, more debauched, more apathetic, dilatory, and inert: their great delight is unmixed indolence. Like the Somal, they appear to be by nature unfit for intellectual labour: of the former people there is but one learned man, the Shaykh Jami of Harar; there is also one learned Msawahili, the Kazi Muhiyy el Din of Zanzibar. Study, or indeed any tension of the mind, seems to make these weak-brained races semi-idiotic. They frequently cannot answer Yes or No to the simplest question. If, for example, a man be asked the place of his tribe, he will point to a distance, though actually living amongst them; or if questioned concerning some particular of an event, he will describe in detail everything but what is wanted.

The Wamrima are of darker colour, and more African in appearance, than the coast Arabs. Writers, however, greatly err in representing them to be of jet-black hue. The popular complexion is a dull yellowish bronze, the dress a fez, or a Surat cap, with a cotton loin-cloth, generally an Arab check or an Indian print, with a similar sheet thrown over the shoulders: they seldom appear in public without a staff or a spear; and, priding themselves upon the possession of umbrellas, they may be seen rolling barrels and working on the sand under the luxurious shade. Their mode of life is simple: they rise early, and either repair to the shop, the boat, or the plantation, or more commonly they waste the morning in passing from house to house—*ku amkia*—to salute neighbours. They ignore “manners:” they enter the house with a warning cry of “*Hodi! hodi!*”—place their spears in a corner, and, without invite, squat or extend themselves upon the floor, till, wearied with conversation, they take “French leave.” The life so real and earnest to the European is with them a continued scene of drumming, dancing, and drinking, of gossip, squabble, and intrigue. The favourite inebriants are tembu or coco-toddy, and mvinyo* its distillation, pombe or millet-beer, opium, bhang, and sometimes foreign stimulants from Zanzibar. The women are as fond of intoxication as the men; and on a *siku ku*—great day, or fête—the whole village is under the influence of the jolly god. Their food is mostly “ugali,” the thick porridge of boiled millet or maize-flour, which represents the staff of life in East Africa; they eat usually twice a-day, in the morning and at nightfall. They employ the coco-nut extensively;

* This is apparently the old word (*oinos*, and with the digamma *voinos*, *vinum*, *vino*, *vin*, *wein*, *win*, &c.), derived from the Portuguese, and supplied with the truly S. African *inceptive m* before a consonant. It is used, however, in Kisawahili for distilled, not for fermented liquors; and the foreign invention required a foreign name.

like the Arabs of Zanzibar, they rasp the albumen, knead it with water, strain the thick juice through a cloth, and boil their rice in it ; and, although a respectable man would be derided for eating raw coco-nut, the richer classes make cakes of the rasped pulp mixed with flour. This immoderate use of the fruit is, according to the people, far from wholesome : it is considered, by its refrigerant properties, to cause rheumatic pains and hydrocele. They chew tobacco with lime, like the Somal, and rarely smoke it, like the Washenzi.

The coast clans, as well as the Wasawahili, are distinguished by two peculiarities of character. The first is a cautiousness bordering upon cowardice, derived from their African blood ; the second is an unusual development of cunning and deceitfulness, which probably results from the union of the Hamite with the Semite. The Arabs facetiously derive the race-name from "Saw-wá hilah,"—He played a trick—and the people boast of it, saying, "Am I not a Msawahili ?" *—that is to say, an "artful dodger." Supersubtle and systematic liars, they deceive when duller men would tell the truth : the lie direct is no insult, and the word uongo (falsehood !) enters largely into conversation. They lie like Africans,† objectlessly, needlessly, when fact would be more profitable than falsehood, when sure of the speediest detection : they have not discovered with the civilized knave, that honesty is the best policy ; they lie till their lies become subjectively truths. With them the lie is no mental exertion, no exercise of ingenuity, no concealment nor mere perversion of veracity ; it is apparently an instinctive and local peculiarity in the complicated madness of human nature. The most solemn and religious oaths are with them empty words ; they breathe an atmosphere of intrigue, manœuvre, and contrivance, wasting about the merest nothings of life—about a pound of grain or a yard of cloth—ingenuity of iniquity enough to win a kingdom : they are treacherous as false ; with them the salt has no signification, and gratitude is unknown even by name.

Though partially Arabised, the coast clans, as well as the Wasawahili, retain many habits derived from the most degraded of the Washenzi savagery. Like the Wazegura heathen of the East, and the Bangala of the Kasanji (Cassange) Valley in the West, they sell their nephews and nieces by an indefeasible right, with which even the parents cannot interfere. The voice of society

* Dr. Krapf, who, to say the least, is peculiar in his derivations, deduces the fanciful explanation from Siwá' (سوانع) hilah, which would mean exactly the contrary of astute—"without guile."

† According to our older travellers, the Hottentots were once free from the vices of lying and stealing. If this be a fact, it would separate them entirely from their neighbours of the South African family.

justifies this abomination. "What!" exclaim the people, "is a man to starve when his brothers and sisters have children?" He is thus justified in doing, on the slightest pretext, what the heathen rarely approve of except to save themselves from starving. Holding the unchastity of women as a tenet of belief, they consider the sisters' sons their heirs. They have many superstitions, and on all occasions consult a pagan mganga or medicine-man. The chokea, a painful stye or tumour upon the eyelids, is held to be caused by the sufferer's laughing (*ku cheka*) at his mother-in-law. If the khunguru or crow caw from the housetop, a guest is coming; if a rat devour the cloth, a death will occur; journeys are hastened or delayed by the notes of birds, as they are heard in front or in the rear; an even number of wayfarers met in early morning is a good omen, but an odd number, or the cry of the mbweha, the fox, before the march, portends misfortune. Strong minds of course take advantage of these follies of belief.

The life of indolence and ease led by the coast Arabs and the Wámrimá depends upon circumstances which well account for their object in occupying detached settlements, and for their aversion to strangers. Besides the Washenzi copal-diggers, the caravans from Ugogo, and especially Unyamwezi, must visit the coast annually, and each considerable village expects the spoil of five or six. The plunder is systematically managed as follows by the people, who, like the village republics of Western India, govern themselves. Every settlement contains a certain number of diwans or head-men: respected by the people on account of their comparative opulence, they purchase the obedience of their subjects, and are then able to fine them in case of contumacy. Of these chiefs there are five distinct ranks. The most powerful is the Muinyi Khambi, the "lord of the manor;" under him is the Mfimáo; the next in inferiority is the Muinyi Káyá, or village chief, and the lowest orders are the Muinyi Úsyáli and the Duchálf. At each place moreover the diwans have different names: at Pangani they are called Muinyi Mkome; at Uzemia, a once populous district north of Saadani, they become Suákálf; and about Whinde, Muinyi Khámbi; from Bagamoyo to Mbuamaji they are addressed as Chomwi.

These diwans enjoy the privileges of fine and extortion; they have also certain marks of distinction. They are authorised, for instance, to wear turbans, and the wooden pattens called by the Arabs kabkab; they may also sit upon cots, chairs, and the mikika, a fine description of mat; a commoner venturing to encroach upon these prerogatives would infallibly be mulcted in goats or cattle. At the Ngoma Ku, or great dance, which celebrates every event in these realms of revelry, only the Diwans may perform the morris with drawn swords before the admiring multitudes. A subject

detected in intrigue with the wife of a Diwan must, under penalty of being sold, pay five slaves; the fine would be reduced to one in the case of a brother commoner; and the master of a bondswoman can demand only from 10 to 12 shukkah.* With this amount of dignity the Diwan naturally expects to live, and to support his family with the fat of the land, and without sweat of brow. When times are hard he organises a kidnapping expedition against a weaker neighbour, and recruits his finances by selling the proceeds. But his income is chiefly derived from the down-caravans of Wanyamwezi. Though rigorously forbidden by the Prince of Zanzibar, Ku fanya hekera, or to force travellers to his particular port, he sends large armed parties of his relations, friends, and slaves as far as 150 and 200 miles into the country, where they act less like touters than highwaymen. By every petty art of mercantile diplomacy, sometimes by force, at other times by fraud, or by bribes of sweetmeats, they secure these caravans, bring them to the village, and then begin the work of plunder. Out of each frasilah (35 lbs. avoirdupois) from 8 dols. to 14 dols. are claimed as the Government due; the Diwans then demand 6 dols. as their fee under various names, plus 1 dol. for ugali or porridge (the "manche"), and 1 dol. for the use of water (the "pour boire"). The owner of the task is afterwards allowed to deal with a Banyan, from whom the Diwan has received a bribe, technically termed his "rice:" the Indian buys for 18 to 21 dols. the article which at Zanzibar is worth 50 dols. If the barbarian be so unwise as to demand coin, he receives a small sum; and being intellectually unfit to discriminate between a cent and a dollar in trade, he loses even more than if he had invested his capital in the coarse and trashy articles which are provided for him by the Banyan. An adept at distinguishing good from bad cloth, and a cunning connoisseur in beads, he has yet no choice: if he reject what is worthless, he must depart without an investment. Such is an outline of the present system, which, however, is nowhere the same in all its details. But everywhere the principle is one—the loss is to the barbarian, and the profits are to the people of the coast. Hence the dislike to strangers. The treaty of commerce concluded between Her Britannic Majesty's

* The Shukkah—the Braça of Portuguese Africa—is a piece of unbleached American "domestics" or cotton cloth, used as a loin-wrapper, and for many other purposes; of varying breadth, according as it is made of shirting or sheeting, but always of 4 cubits, or 6 feet in length. The usual value of the shukkah (merkani) at Zanzibar, when bought in the piece called a gorah, or jurah, is about 7d. On the coast its value is about 0·25 dol. = 1s. 0d. In the interior it rises to the equivalent of a dollar (4s. 2d.) and more. It represents the silver coinage of Europe, beads being the copper, and brass wire the gold. The word doti will often occur in these pages; it means 2 shukkahs, or a length of 12 feet—the Tobe of Abyssinia. The African expressions have been retained, as having all the advantages of technical words, often so unreasonably inveighed against. For other details concerning cloth see Chapter XVI.

Government and His Highness Sayyid Said of Maskat and Zanzibar, on the 31st of May, 1839 (article 10), secured to the chiefs of the Mrima a monopoly in the articles of ivory and gun copal, "on that part of the East Coast of Africa, from the port of Tangata (Mtangata), situated in about $5\frac{1}{2}$ ° s. lat., to the port of Quiloa, lying in about 7° s. of the Equator." It is not improbable that the jealousy of European nations, each fearing the ambitious designs of its neighbour, brought about this measure, equally injurious to protectors and protected.

The coast Arabs and the Wámrimá have, besides deceiving caravans, another, rarely wanting, escape from poverty. The lower classes hire themselves to merchants as porters into the interior; they receive daily rations of grain, and a total hire of 10 dols., half of which is paid in advance; and the proprietor thinks himself fortunate if, after payment, only 10 per 100 desert. Respectable men, by promising usurious interest to the Banyans, can always borrow capital enough to muster a few loads, and then they combine to form one large caravan. The wealthier have houses, wives, and families in Unyamwezi as well as upon the coast, and between the two they spend life, often marrying some chief's dark daughter, and becoming more barbarous than the barbarians themselves. They generally, upon the strength of a small loan from one of the Prince's dependents or employés, call their ventures "mal Sarkál," or the property of Government, to deter strangers from knavery. The commercial traveller's prospect, however, is not unclouded. He frequently suffers from sickness; some are lost, and never heard of; and others are murdered, and deeply regretted. Many ruin themselves by prodigality, or are ruined by accidents: Unyamwezi abounds in these paupers, who hang on to some more fortunate friend, in hopes of better luck, till their beards wax grey, and their infirm limbs refuse to carry them home. Besides which, the wanderer from the coast is involved in continual quarrels: his mania for intrigue, and his restless ambition, never allow him to rest satisfied with fortune's favours.

CHAPTER III.

THE FIRST REGION: THE VALLEYS OF THE KINGANI AND MGETA RIVERS.

THE first or maritime region extends from the shores of the Indian Ocean in E. long. 39° to the mountain-chain forming the land of Usagara in E. long. $37^{\circ} 28'$; its breadth is therefore 92 geographical miles, measured in rectilinear distance, and its mean length, bounded by the waters of the Kingani and the Rufiji rivers, may be assumed at 110. It is divided into two basins;

easterly that of the Kingani, and westward that of the Mgeta stream with its many tributaries : the former, which is the principal, is called the land of Uzaramo ; the latter, which is of the 2nd order, contains the provinces of Khutu, by the Arabs pronounced Kutu, and Uziraha a minor district. The natives of the country divide it into the three lowlands of Tunda, Duthumi, and Zungomero.

The present road runs with few and unimportant deviations along the whole length of the fluviatele valleys of the Kingani and the Mgeta. On both sides of this line, whose greatest height above the sea-level was found by B. P. therm. to be 330 feet, rises the rolling ground, which is the general character of the country. Its undulations present no eminences worthy of notice ; near the sea they are short and steep, farther inland they roll in longer waves, and everywhere they are covered with abundant and luxuriant vegetation, the result of decomposition upon the richest soil. In parts there is an appearance of park land—bushless and scattered forests—grass rises almost to the lower branches of the smaller thorns ; here and there clumps and patches of impassable shrubbery cluster round knots and knolls of majestic foliated trees. The narrow footpaths connecting the villages often plunge into dark and dense tunnels formed by overarching branch and bough, which delay the file of laden porters ; the muddy pools lingering long after a fall of rain in these low grounds fill them with a chilly, clammy air. Merchants traverse such spots with trembling, as in these, the proper places for ambuscade, a few determined men easily plunder a caravan by opposing it in front or by an attack in rear. The ways are often intersected by deep nullahs and water-courses, dry during the hot season, but unfordable when rain falls. In the many clearings tobacco, maize, holcus, sesamum, and ground-nuts, manioc, beans, pulse, and sweet potatoes flourish ; the pineapple is a weed, and a few cocos and mangoes, papaws, jack-fruit, plantains, and limes are scattered over the districts near the sea. Rice grows abundantly in the lower levels. The villages are hidden deep in the bush or grass : the crowing of the cocks heard all along the road, except in the greater stretches of wilderness, proves them to be numerous ; they are, however, small and thinly populated. The versant as usual in maritime E. Africa trends towards the Indian Ocean. Water abounds even at a distance from the rivers ; it springs from the soil in diminutive runnels and lies in "shimo"** or pits, varying from surface-depth to 10 feet. The monsoon rains, which are heavy, commence in March, about a month earlier than in Zanzibar, and the duration is similar. The climate of the higher lands is somewhat superior to that of

* The shimo is synonymous with the Arabic hufrah, a pit, as opposed to kisima (Ar. Tawi), a made well.

the valley, but it is still hot and oppressive. The formation, after passing from the corallines, the limestones, the calcareous tuffs, and the rude gravelly conglomerates of the coast, is purely of primitive and sandstone formation: blocks of fine black hornblende and hornblendic rock, used by the people as whetstones and grinding-slabs, abound in the river-beds, which also supply the clay used for pottery. The subsoil is, near the sea, a stiff loam, in the interior a ruddy quartzose gravel; the soil is a rich brown or black humus, here and there coated with, or varied by, clean white sand, and in some parts are found seams of reddish clay. Fresh-water shells are scattered over the surface, and land-crabs burrow in the looser grounds where stone seldom appears. Black cattle are unknown in the maritime region, but poultry, sheep, and goats are plentiful: near the jungle they are protected from the leopards or ounces* by large wooden huts, like cages, raised for cleanliness on piles.

The fluviatile valleys will be best described by the itinerary. As a rule they resemble in most points the physical features of the coast and island of Zanzibar: the general aspect of the country, however—the expression of its climate—undergoes some modifications. Near the sea the valley is a broad winding depression, traversed in a serpentine line by the river, whose bed is now too deep for change. About the middle expanse stony ridges and rocky hills crop out from the rolling ground, and the head of the valley is a low continuous plain. In many places, especially near the estuary, river-terraces like road embankments, here converging, there diverging, indicate by lines and streams of waterworn pebbles and sea-shells the secular uprise of the country and the declension of the stream to its present level. These raised seabeaches at a distance appear crowned with dwarf rounded cones which, overgrown with lofty trees, are favourite sites for settlements. In the lower lands the jungle and the cultivation are of the rankest and most gigantic description, the effect of a damp, hot region, where atmospheric pressure is excessive. The grass, especially that produced by the black soils in the swamps and marshes, rises to the height of 12 feet and serves to conceal runaway slaves and malefactors: the stalks vary in thickness from a goosequill to a man's finger. The larger growths, which are so closely planted that they conceal the soil, cannot be traversed without paths, and

* The Chui of Kisawahili is usually translated leopard, and by the French chasseurs at Zanzibar "le tigre." It appears, however, to be of two kinds, the common leopard and the ounce (*F. uncia*), with spotted markings on a pale ground tint. Neither this animal nor the leopard was seen alive in the interior; yet the chui appears almost universal. The Washenzi hunt it with bows and arrows, and prize the spoils highly for wear. The Arabs fix muskets for it after the fashion of our spring guns. They value the skin, and use it as a rug, ascribing to it peculiar power in the cure of hemorrhoids.

even where these exist the traveller must fight his way through a dense screen, receiving from time to time a severe blow when the stalks recoil, or a painful thrust from some broken and inclined stump : even the horny sole of the sandal-less African cannot tread these places without being cut or staked, and everywhere a ride through the avenues whilst still dripping with the cold exhalations of night, with the sun beating fiercely upon the upper part of the body, is a severe infliction to a man not in perfect health. The beds of streams and nullahs are sometimes veiled by the growth of the banks. These crops spring up with the rains, and are burned down by hunters,* or more frequently by accident, after about a month of dry weather ; in the interim fires are dangerous : the custom is to beat down the blaze with leafy boughs. Such is the variety of species that in some parts of the river valleys each day introduces the traveller to a grass before unseen. Where the inundations lie long the trees are rare, and those that exist are slightly raised by mounds above the ground to escape the destructive effects of protracted submergence : in these places the decomposed vegetation exhales a fetid odour. Where the waters soon subside there are clumps of tall shrubbery and seams of forest rising on extensive meadows of grassy land, which give it the semblance of a suite of natural parks or pleasure-grounds, and the effect is not diminished by the herds of gnu and antelope prancing and pacing over their pastures.

The climate is hot and oppressive, and the daily sea-breeze, which extends to the head of the Mgeta valley, is lost in the lower levels. About Zungomero rain is constant, except for a single fortnight in the month of January ; it seems to the stranger as if the crops must infallibly decay, but they do not. At most times the sun, even at its greatest northern declination, shines through a veil of mist with a sickly blaze and a blistering heat, and the overcharge of electricity is evidenced by frequent and violent thunderstorms. In the western parts cold and cutting breezes descend from the rugged Duthumi crags.

The principal diseases of the valley are severe ulcerations and fevers, generally of a tertian type. The "Mkunguru" begins with coldness in the toes and finger-tips ; a frigid shiver creeps up the legs, followed by pains in the shoulders, severe frontal headache, hot eyes, and a prostration and irritability of mind and body. This preliminary lasts for one to three hours, when nausea ushers in the hot stage : the head burns, the action of the heart becomes violent, thirst rages, and a painful weight presses upon the eyeballs : it is often accompanied by a violent cough and vesical irritation. Strange visions, as in delirium, appear to the

* The people also seem to have an idea that burning down the grass attracts rain.

patient, and the excitement of the brain is proved by unusual loquacity. When the fit passes off with copious perspiration the head is often affected, there are strange sounds in the ears, and the limbs are weak. If the patient attempts to rise suddenly he feels a dizziness, produced apparently by a gush of bile along the liver duct : want of appetite, sleeplessness and despondency, and a low fever, evidenced by hot palms, throbbing temples, and feet painfully swollen, with eruptions of various kinds, and ulcerated mouth, usher in the cure. This fever yields to mild remedies, but it is capable of lasting three weeks.

A multitude of roads, whose point of departure is the coast, form a triangle and converge at a place in Central Uzaramo which will presently be specified. The route whose several stations are now to be described is one of the main lines running from Kaole and Bagamoyo, in a general south-west direction, till it falls into the great trunk-road which leads directly west from Mbuamaji. It is divided into thirteen caravan stages, but a well-girt walker will accomplish the distance in a week.

Issuing from the tall palisade of "Kaole," a little village and Baloch station, the narrow path winds in a south-westerly direction to Kuingani or Mgude,* a short march of one hour and a half.† At first it traverses sandy soil thick with thorn and bush, which in places project across the way : then ascending a wave of ground where cocos and the wild arrowroot flourish, it looks down upon a fair expanse of plain, sand veiled with humus, here and there growing rice, with mangoes and other tall trees regularly disposed as if by the hand of man. Finally, after crossing a muddy grass-grown swamp and a sandy hollow full of water when rain has been heavy, the path passing through luxuriant cultivation enters Kuingani. The little settlement is composed of a few beehive huts and a bandani or wall-less thatched roof—the village palaver-house—clustering orderless round a cleared central space. Outside old and dwarf cocos, mangoes almost wild, the papaw, the cotton shrub, the perfumed rayhan or basil, the sugar-cane, and the plant called by the Goanese rosel,‡ vary the fields

* The Mgude tree has been described in a previous chapter. Kirungani, or Kuingani, of which the latter syllable (*ni*) is a locative particle, signifying in, near, or about, and often used pleonastically, means, in Kisawahili, a coco plantation near the coast. The Arabs, who often pronounce the word "Shungani," would translate it, in their barbarous dialect, by Shawanib, the Semitic plural of the African shamba, a plantation.

† It has been thought better to record these marches by time and not distances, the latter being laid down upon the map. The rate of progress, concerning which ampler details will be given, varies from 2 to 3 statute miles, not rectilinear, per hour.

‡ This favourite material for Indian jams and jellies is plentiful in Unyamwezi, as well as in Uzaramo and Khutu. It appears to be the Hibiscus sabdariffa of India. The people ignore the use of it, and the Arabs hold it to be a species of wild sesamum.

of holcus, rice, and turiyan (*Cajanus Indicus*). Such is the "Nakl,"—or preparatory stage of the Arabs—an invariable first departure, whence porters who find their loads too heavy, or employers who suspect that they are too light, can return to Kaole and reform.

The complement of this march, also accomplished in an hour and a half, ascends almost imperceptibly rising ground, the old sea-beach, crossing alternately cultivated clearings, where huts and hamlets appear on all sides divided and hedged by open scrubless patches of forest and high rank grass. The Mtogwe* and the Mbungo-bungo, † the dwarf fan-palm, ‡ the *Hyphaena* and the grotesque Mbuyu or calabash,§—which is of more markedly bulbous form in this region than on the coast, where the trunk is columnar, and the heavy extremities, weighed down by the periodical winds, give it the shape of a lumpy umbrella,—tower above the other growths. The castor and the wild egg-plant,|| with its blue flowers and bright yellow apples, cover the uncultivated

* In these woods there are several trees bearing what are called in India wood-apples. The finest are those growing in the vicinity of water; they have fruits as large as a child's head. They contain within the hard rind, which, when ripe, is orange-coloured, large seeds or pips covered with a yellow pulp of a grateful *agro dolce* flavour, with a suspicion of the mango. When the rind is soft they are full of worms.

† The Mbungo-bungo, apparently the fruit supposed by Dr. Livingstone (chap. xiii.) to represent a variety of the *nux vomica*, abounds in Uzaramo and Usumbura. It resembles the Mtogwe, and is generally a favourite with the people, especially the Wanyamwezi porters. N.B. Since the above was in print, Dr. Hooker having kindly inspected a specimen of the Mbungo-bungo, has pronounced it to be a strychnos, "closely allied to a species brought by Dr. Kirk from the Quambo." That eminent botanist himself procured at the Cape of Good Hope a strychnos resembling the species brought home by Dr. Livingstone.

‡ A species of *Chamærops*, the dwarf fan-palm, or palmetto, of Southern Europe. It is called by the people Myara (Myala), and is used for mats. It abounds in the maritime regions.

§ The Mbuyu, or calabash (*Baobab*, or *Adansonia digitata*, the Mowana of South Africa, and the Kuka or monkey-bread-tree of the North), is the most characteristic feature in Eastern Africa, and in every region it shows some difference and peculiarity of formation. It is not found in the mountains of Usagara, and rarely in Unyamwezi, or to the westward. In the northern regions of Usukuma it is common. There appear to be two varieties of this tree, similar in bole, but different in foliage and in general appearance. The normal species has a long leaf, and the drooping of the heavy branches gives to the outline the form of a dome. The rarer variety, observed only in Usagara, has a small leaf, in colour like wild indigo; and its arms striking upwards assume the appearance of a bowl.

The parts of the calabash most used are the bark and the gourd. The latter is called Buyu, and, being of small dimensions, it is converted into Ghuraf, or baling-ladles. The water-gourd, also called Buyu, is a ground-plant, but as its fruit when dried is converted into water-bottles, some travellers have confounded it with the growth of the calabash or Baobab, and speak of a "Kalabasse full of water."

|| This solanaceous plant, called in India Jangli Bengan, or the wild Bengan, by the Wasawahili Mtunguya, by the South Africans, according to Dr. Livingstone, Toluanne, and by the Baloch Panir, or cheese (the *Punneeria conglutans* of the late Dr. Stocks), from the effect of the juice in curdling milk, flourishes from the coast to the Lake Regions. It is not, however, used by the people, who consider it poisonous.

grounds. After a steep descent, with the invariable grassy marsh at its base, the road ascends a wave of land thick with a jungly vegetation, upon the crest of which is Bomani,* the "stockade." The little palisadoed settlement is under the jurisdiction of Bagamoyo: tolerable water, the great deficiency of this region when distant from the rivers, is procured from pits in the swamp below, and provisions are abundant. As at Kuingani, the air is stagnant, the sun is fiery, and clouds of mosquitos make the nights miserable. Despite these disadvantages it is a favourite halting-place for up-caravans, who defer to the last the evil days of long travel; the two stages, however, are reckoned by the Arabs as one.

The second station is Nzasa,† the first settlement of unmixed Wazaramo heathen, distant nearly 4 h. march from Bomani. The path first passes through an umbrageous forest in which caravans often lose the way; it then descends through fertile fields into a low and broken valley of little extent, upon whose farther side, amid majestic trees, tall shrubs, bright wild flowers, and thick grass, with intervals of clearing, lies the settlement of Mkwaju la Mvuani, the "Tamarind in the rains,"‡ composed as usual of a few hovels and a palaver-shed, with a fine lime-tree in the open centre. Provisions and hard muddy water being plentiful at this frontier-station, caravans often make a final halt to prepare for the dreaded Wazaramo. Beyond the settlement a patch of jungle leads to cultivated grounds belonging to the villagers, whose scattered and unwalled abodes are here partially concealed by clumps of trees. The road, now sweeping parallel with the river plain, which runs from north-west to south-east, crosses several swamps, black muddy bottoms covered with tall thick rushes and leek-green paddy. Red copaliferous soil clothes the higher levels. Here on the wayside appear for the first time the Khambi,§ or substantial

* The Bomá, in Arabic Sfwá, is a loose fence or a stockade surrounding a camp or a settlement. The Kaya in East Africa may be translated a "fenced village." The headman is addressed as Muinyi Kaya, or village lord.

† Nzasa in this tongue means "level ground;" in Bunda, according to Mr. Cooley ('Inner Africa Laid Open,' p. 14), it signifies a canoe.

‡ The tamarind-tree, called by the Arabs of Zanzibar "Subár," extends from the coast to the Lake Regions; with its lofty stem, its feathery leaflets, and its branches spreading dark cool shade, it is a beautiful feature in African landscape. The acidulated fruit is doubtless useful as a palliative and corrective to bilious affections; it is as much prized by the Africans as by the East Indians. The country people merely peel and press it into bark baskets, consequently it soon becomes viscid and is spoiled by mildew. The Arabs, who use it extensively in cooking, stone it, expose it to the sun till dried, and knead it into balls, with a little salt and oil to prevent the effects of damp. Thus prepared and preserved from the air, it will keep for years. The Africans ignore the art of extracting an intoxicating liquor from the tamarind.

§ "Khambi" is a word universally used from the coast to Ujiji in all its acceptances. It means primarily a kraal; hence it is applied to the stage of a journey—"how many khambi are there?" would be equivalent to asking how many stations—and, finally, it is used for a "mess," the smaller bodies into which large gangs of porters divide themselves.

kraals which evidence unsafe travelling and the unwillingness of caravans to bivouac in the villages. In this region they assume the form of round huts and long sheds or boothies of straw or grass, supported by a framework of rough sticks deeply planted in the ground and tied together with bark-strips. The whole is surrounded with a circle of thorns, which form a complete defence against bare feet and naked legs, and the entrance or entrances are carefully closed at nightfall, not to open till the morning. About half-way a junction of the Mbuamaji road is reached, and the path becomes somewhat broader and less rough. Passing on the right a hilly district called Dunda,* or "the hill," the road falls from the ancient seabeach into the alluvial valley of the Kingani: presently rising again, it enters the normal little settlement of Nzasa. Caravans usually encamp upon the edge of the river-terrace in a mass of tree and bush adjoining the village,—a perfect place for night attack and ambuscade.

Below, at a distance of about a mile, bisecting a plain, green with cultivation and studded with huts and hamlets, the Kingani river rolls along its sandy bed, which here attains a breadth of about 50 yards. In the higher levels it narrows, and the banks of stiff black mould are rendered all but unapproachable by avenues of trees, amongst which the tall Mparamusi, the Msufi,† the Msukulio,‡ and the little Msoho § were observed. In no place is the stream fordable, as the ferry-boat belonging to each village proves. Thus far it is navigable: to the extent of three days' journey rafters are floated down for the Zanzibar market. It is, however, infested by crocodiles and hippopotami:|| the latter animals, housing in

* Dunda, in the Kisawahili of the coast, means a hill; kidunda—the ki being here a diminutive prefix, like the ka (ea) in the Bunda language—a hillock.

† The msufi is a species of bombax, or silk-cotton tree, whose dried pods are emptied of the sufi, or contents, which are used as pillow stuffings. In Zanzibar island it differs materially from that of Western India, and in Khutu there is another variety unlike both. On the continent it is a tall tree, often planted in the central spaces of villages, to which it serves for a landmark. Its appearance is peculiar; sometimes as many as four or five trunks, each two to three feet in diameter, separate at the level of the ground; the long tapering branches also stand out stiffly at right angles from the bole; and the leaves, instead of forming masses of foliage, are sparsely scattered in dense bunches of small size.

‡ The msukulio, unknown to the people of Zanzibar, is a huge pile of dark verdure, with a leaf that somewhat resembles the mango.

§ The msoho (*Guilandina Bondue*) is found throughout this portion of East Africa; the seed is used, as in India, for counters in the game of bao or "tables," and it is administered by the native waganga, or physicians, as a cathartic.

|| The boko, or kiboko, called by the Arabs bakar el khor, or the creek bullock, is in this part of Africa a fiercer animal than in the south. The natives watch him till he quits the water, and then despatch him with spears and arrows. If wounded in the stream he dives and clings to the roots and rocks of the bottom; if killed, he sinks, and it is difficult to find him till raised by decomposition. He is sometimes seen in the salt sea, but more generally in the creeks which receive the sweet waters of some stream. Canoes travelling by day creep along the river sides whilst the herd is in the deep centre; by night they paddle along the mid-stream to avoid

the river and resenting intrusion, are a pest to the country, as on the coast night-watches fire muskets to deter them from depredation. In June, 1857, the son of Diwan Ukwere, chief of Kaole, proceeding with a party of slaves on a trading expedition up the Kingani, was upset by the "kiboko" and drowned. But this obstacle might soon be removed, then there would be no reason why boats should not ply during the flood season as far as the rough ground near the Duthumi hills. The Kingani, like all streams in this part of the continent, is full of dark-green mud fish, especially a scaleless variety (*Silurus?*), called Kambári and known by other local names. This great "Miller's thumb" has fleshy cirri, appears to be omnivorous, and tastes like animated mire.

The third station from Kaole is Kiranga-Ränga, a district of Uzaramo, distant six hours' march from Nzasa. The path descends the well-wooded river terrace and traverses the undulating ground, the open park-like district, and the thick tall grass of the river valley. Thence crossing a nullah that trends towards the main stream, it rounds a muddy fen and spans some spurs of low hill. The view here becomes more open and picturesque. By the way-side is planted the Mzimu or Fetiss-hut, a penthouse about a foot high, containing as votive offerings ears of *holcus* or pombe-beer in a broken gourd. Here, too, the graves of the heathen meet the eye; in all other parts of Eastern Africa a mouldering skull, a scattered skeleton, and a few calcined bones, the remains of wizards and witches dragged to the stake, are the only visible signs of mortality. The Wazaramo tombs, generally of chiefs, are imitated from those of the Wamrima, parallelograms 7 feet by 4, of regular dwarf palisading, that enclose a space cleared of grass and planted with two uprights to denote the position of head and feet. In one of the long walls there is an apology for a door. The corpse, however, is not made to front any particular direction; moreover, the centre of the oblong has the hideous addition of a log, so carved by the unartistic African into a bust and a face

the animals, who are then scrambling up and down the mud-runs. Yet these precautions do not always prevent accidents. The black old "rogue" charges a canoe silently and without warning from below, hogging his back and heaving till the boat is tilted up, and the assailants find themselves in the water. Besides butting, he strikes with the forefoot, tears off the gunwale with his teeth, and with his dagger-shaped tusks bores holes in the bottom of the boat. At Ujiji these animals do serious injury to the crops, and, indeed, the people generally throughout the country complain of them. Travellers who wish to secure the hippopotamus may take a lesson from the Landeens of East Africa, who "harpoon the animal with a barbed lance, to which is attached, by a cord three or four fathoms long, an inflated bladder." (Journal of the late Capt. Hyde Parker, R.N., quoted by Dr. Livingstone, chap. 32.) Curious to say, Mr. Cooley ('Inner Africa Laid Open,' p. 114) translates Pa-mamba *Hippopotamus* (commonly called Formosa) Bay, and in a note explains that mamba is the hippopotamus. In all these dialects "mamba," or rather "m'amba," is the common word for *aferocodile*, and on the coast, and in the island of Zanzibar, it is also used to signify a reef.

surmounted by a strip of cloth for turban, as singularly to resemble a legless baboon. These simulacra mœesta.

Arte carent, cæsisque exstant informia lignis.

The graves of Moslem travellers eschew this abomination : they are usually cleared ovals, with outlines of rough stone and a strew of smooth pebbles, after the fashion of the coast-clans. Two or three stumps of wood fixed in the ground denote that the corpse fronts towards Mecca, and, as amongst the Jinga of Western Africa, a broken china bowl or cup, lying upon the earth, is sacred to the memory of the dead.* Towards the end of this march the path, after traversing rolling ground and a cultivated depression, crosses a shallow salt-bitter rivulet, cold and clear, which flows towards the Kingani river. On the grassy plain beyond large game first appears—the zebra,† the koodoo,‡ guinea-fowl,§ partridge,|| and quail ;¶ green pigeons and the bird

* Can this be, amongst so unimaginative and materialistic a race as these Africans, a symbol of that fine poesy—"Or ever the silver cord be loosed, or the golden bowl be broken" (Ecc. xii. 6)? The custom may have originated in Zanzibar, where bowls of broken china and pottery are mortared into the tombs. The habit of burying upon the wayside is peculiar in East Africa to the Wazaramo ; the Jinga of the west, and the people of Angola, have the same predilection, even selecting spots where cross-roads meet.

† The zebra, called by the Arabs himár wahshi, and by the Kisawahili phundá mliá, both names signifying wild ass, is found throughout the country. They are shot and trapped by the natives, who convert the skins into shields and saddle-bags for their asses, and use the tail as a chauri, or flyflapper. The flesh is relished by the Arabs, who refuse to touch that of the tame donkey. The zebra collects in small herds, and affects the grassy plains ; the stallions, worthy of Homeric simile, are fierce and strong ; they have successfully defended themselves with teeth and heels, it is said, against the lion. The wild ass of Cutch and Tibet was not observed in East Africa, but the people speak of an animal which seems to be the E. quagga.

‡ The koodoo (coudou, or *A. strepsiceros*, in Kisawahili kuru) is in these regions a fine large animal, attaining the size of a bullock, its meat loads from five to eight men, and its horns measure in length forty direct inches not including the spirals. These are used by the people as musical instruments, like the spoils of the oryx, which are comparatively rare. The largest koodoo were seen in Ugogo. Out of the breeding season the old males separate from the females and the young, who are more timid and easily disturbed. Like the zebra and the wild ass of Tibet, all seem subject to intestinal worms. The koodoo is most tenacious of life. At eighty yards a bullet hardened with spelter (twenty to the lb.) has broken the animal's leg, and, cut in two by the ribs, has passed through the heart. Yet the beast walked off fifty yards, and fell only when hemorrhage extended over the interior.

§ This indigen of Africa and Arabia is found almost throughout the country of tropical rains, especially in the drier regions ; it here is called khángá by the people, and dijájat Firaun (Pharaoh's hen) by the Arabs of the Upper Nile. The bird resembles our domestic species (*N. meleagris*). The crested pintado (*N. cristata*), and other varieties, however, abound. It is a wild and timid bird, and the East Africans have never attempted to domesticate it. When young the flesh is tender, with a fine game flavour, in the second year it becomes hard and dry.

|| The khwale, or partridge, is a large, strong bird, with a dark rufous plume and reddish legs ; it may be a local variety of the *T. rufus*. The francolin mentioned by Dr. Livingstone was not observed.

¶ The quail (*T. coturnix*) appears to have no name in the Kisawahili ; it is a fine variety, larger than our common European bird, so fond of running that it can scarcely be started without dogs, and generally solitary.

called in India the crow- or Malabar- pheasant (a variety of the cuculidæ), abound. The ground is here a rich red copaliferous soil, supporting black mould, miry during the rains and caked and cracked by the potent suns. Kiranga-Ranga is a hilly district, with many little villages overlooking the low cultivated grounds, where caravans encamp. Water is plentiful in pits 4 or 5 feet deep, and the people, though a turbulent and violent race, do not disdain to sell their rice and sorghum to travellers.

The next march of 3 h. 30 m. leads through cultivation into a dense jungle over a serpentine path, rising from and falling into the river valley, to a place called Thumba I'here, from its highly respectable diwan. The country around is populous and fertile : here the mkumbaku or corindah,* the salsaparilla vine,† and a small green mulberry (*Morus alba*, the tut of India), similar to that of the Usumbara Mountains, were observed ; and on the banks of the stagnant pools which supply the district with water the tall coco and the mango emerge from a dense mass of fetid vegetation.

From Thumba I'here the road winds for 4 h. 40 m. over reddish sand through alternate strips of rich cultivation and thick jungle, which afterwards opens out into a forest in which the light-barked msandarusi or copal tree attains its full dimensions. This is one of the richest diggings, and the roadsides are everywhere pitted with pockets, 2 or 3 feet deep by 1 in diameter. Arrived half way, the traveller enters rich cultivation girding the settlements of Mohogwe, one of the most dreaded of dreaded Uzaramo. After crossing a low muddy level, overgrown with rush and tiger-grass, and a watercourse running north-west by west, the path ascends rising ground, where an open forest is bright with flowers and blossomed shrubs, and lastly debouches upon the kraals of Muhonyera.

The district of Muhonyera occupies the edge of the low plateau forming the southern terrace of the Kingani River. Water is found in seven or eight shallow reedy holes in the valley below : it acquires from decomposed vegetation an unnaturally sweet and slimy taste. This part of the country, being little inhabited, is much infested with wild beasts ; the guides speak of lions, and the cynhyæna ‡ is more than usually destructive. The woods abound

* The mkumbaku is the karandah (*Carissa Carandas*) of India, unknown to the Zanzibar islanders. It grows wild and abundantly in the maritime African regions. The berry, which is eaten by the Washenzi, appears before and ripens after the masika, or rains.

† This salsaparilla is found in Usumbara, on the island of Zanzibar, and as far west as the Tanganyika Lake ; it is the kâolâ kântâ, or "crow's thorn" of Western India. Dr. Livingstone (chap. xxxi.) mentions a species extending from Londa to Senna, but never exported by the Portuguese.

‡ The Fisi of E. Africa is the Wuraba of the Somal, the Wilde Honde and the Cynhyæna of the Cape regions. It is common throughout the country, and during

with large and small grey monkeys * with black faces ; clinging to the trees, they gaze for a time imperturbably at the passing strangers, till, having satisfied curiosity, they descend and bound away with long plunging leaps. At Muhonyera the up caravans must halt to lay in supplies for the desert march westwards. The view from the hill-side is suggestive. The dark green plain of sombre monotony, with its over-hanging strata of mist-bank and dew-cloud, appears in all the worst colours of the Oude Tirhai or the jungles of Guzerat, which are held to be deadly as long as the moisture of the monsoon endures. Far to the west rises Kidunda, the "Hillock," a dwarf cone breaking the line of blurred jungle, and somewhat northward of it towers a cloud-capped wall of blue, the crags of Duthumi, upon whose precipitous sides the eye, long weary of low levels, rests with a sensation of satisfaction.

The seventh stage of 2 h. 45 m. is usually Sagesera, in the eastern third of this Vale of Death. The path descending into a thick jungle on sandy ground, with a few isolated plantations of holcus, leaves on the left a low hill, called by the guides Dunda Nguru, or "Seer-fish Hill."† The camping kraal is execrably situated in a hollow of dense reedy grass, hugging a tree-lined affluent of the Kingani, by which attack, even from the crocodiles ‡ would be covered : the water is bad, and a mortal smell of decay

the attack of cholera in 1859 its cry, which is a low whine, was heard in the streets of the coast settlements. The album græcum is found in little heaps, as if the animals met in one place. This large and powerful variety is the scavenger of the country. It seldom attacks men, except when sleeping, and then it snatches a mouthful from the face, causing a ghastly disfigurement. Three asses belonging to the Expedition were destroyed by this animal. In all cases they were attacked by night with a loud shriek, and a piece of flesh was jaggedly torn from the hind-quarter. These, however, were asses brought from Zanzibar ; the Unyamwezi animal, if not tied up, will always defend himself successfully against his cowardly assailant.

* There are many species and varieties of monkeys in this part of the continent. The T'humbari, or T'umbili, alluded above, appears to be the Indian Langur. It has a black face, a grizzled skin, and a long tail, and varies in size from a rabbit to a small greyhound. These monkeys abound in the jungles and near the debouchures of the rivers. They are sometimes caught when young and tamed by the people. As in most barbarous countries, there is a prejudice against killing them, on account of their similarity to man. Certain European gourmands on the island of Zanzibar have experimented upon this monkey, and have pronounced its flesh excellent.

† The seer-fish is called by the Arabs Kunad, by the Wasawahili Nguru. Our Anglo-Indian name is a corruption from the Persian Shir-máhi, "lion-fish," so called from the sharp armature of its jaws.

‡ The crocodile, called by the Wasawahili M'amba, by the Arabs Simsah, a corruption of Timsah, abounds in every considerable stream, and in the waters in the Tanganyika lake. It is much feared by the people, who, like most savages, declare that it strikes with the tail. As in Abyssinia, it causes considerable loss of life, and has been known to carry off children when bathing within few yards of their homes. There is no prejudice in these regions against persons wounded or splashed by crocodiles as amongst the Bakwayn and other Kafir tribes, nor are parts of the body dried and sold for aphrodisiacs as in Egypt and Northern Africa. Any one, however, who kills a crocodile in these countries is invariably suspected of intending to use its fat for poison.

is emitted by the dank black ground. Near Sagesera the Kingani receives the waters of the Mukondokwa River (?),* which is, however, a head-stream rather than a tributary, the same water receiving, as usual in barbarous lands, different names from the several countries which it traverses.

A plain, desert but prodigiously fertile, and varied by patches of jungle, field, and swamp, follows the right bank of the Kingani, which is here, to judge from the eye, about 70 yards broad, and it runs under tall and stiff earthbanks. The Ukose, a deep and precipitous nullah, then breaks the path: beyond it are two others of similar formation, dark, and overhung with jungle. A little farther on lies the "Makutaniro," † or junction of the Mbuamaji trunk road, with which the lines from Konduchi, Mzizima, and Magogoni have already united. Beyond it the path improves, the country opens out into the semblance of an English park, and large game is seen from the road. The plain is either sand or humus, and here rounded stones, doubtless swept down by torrents from the river terrace, and pisolithic iron begin to appear. At the "Makutaniro" a Mzaramo chief claims a blackmail, and obtains it by barring the road with archers ready to pour in, should occasion require, a flight of grinded and poisoned arrows. After a march of seven hours one of the bends of the Kingani discloses to view the kraal of Tunda, the Fruit, so called for the usual reasons,—the land is fruitless, and, though partially cultivated, it cannot even afford provisions.

From Tunda to Dege la Mhora, or "the large jungle-bird," ‡ is a short march of 2 h. 30 m. The footpath crossing a deep nullah spans a pestilential expanse of spear-grass, and a cane, called from its appearance, gugu-mbuia, or the wild sugar-plant, with huge calabashes and clearings in the jungle. Hereabouts the Wadoe, a northern tribe, pressed by war and famine, have settled amongst the Wazaramo, south of the Kingani River. A march of 2 h. leads the caravan to a little village called after its headman B'ana Dirunga : § provisions being

* This unsatisfactory figure of print will often occur in these pages. African ignorance, error, and causeless falsehood, together with the grossest exaggeration, deter the traveller from committing himself to any assertion which he has not proved to his own satisfaction.

† This popular word, signifying a junction, an anastomosis, is derived from the verb *ku kutána*. By Mr. Macqueen ('Notes on the Geography of Central Africa,' p. 118) it is corrupted to Montanero, a word rather Italian than African, which, moreover, is given as the name of a river.

‡ Ndege is the common generic word for a bird; in the plural it becomes Múdege. The form Dege is an incrementation, and means a large bird.

§ Bwána, pronounced B'ana, with the w almost elided, means master. It is probably an African corruption, or a metathesis from the Arabic Abuna. The diminutive is Kib'ana, master. B'ana and Kib'ana are affixed in Kisawahili to the names of Moslems, as B'ana Bekkari (for Abubekr), and Muinyi precedes the names of the Wasawahili and the Wamrima or coast-clans, as Muinyi Mboni.

there scarce, large bodies usually push on for 30 m. through an open country of scattered miñosas and cultivation to Dege la Mhora, or to the neighbouring district, "Madege Madogo," or "the little birds." Dege la Mhora is the village where the ill-fated traveller M. Maizan was cruelly tortured and slain by P'hazi Mazungera, a Mzaramo chief, and the guides point out on the north of the road the calabash-tree under which the foul deed was done. The villain, now grown old, has retired to a village in the vicinity of Mbuamaji, and has resigned his inferior settlement to his eldest son Hembe. The hamlet is concealed from view by a patch of jungly bush; it musters about 50 archers, "tall youths, and strong." "Madege Madogo," so called in distinction to its western neighbour, "Madege Makuba," or "the great birds," is reached after a 3 h. march from Dege la Mhora, through forest, jungle, and bush, with mud and morasses after rain; on the right of the path is the bending and densely wooded line of the Kingani river, and, according to the people, the Rufiji may be reached after four or five marches southwards.

At this point the Wazaramo are mixed with the tribes of Khutu and Usagara. The next station is the Mgeta River, the western frontier of Uzaramo; the long journey of 10 h. is usually divided at Kidunda. The road follows the sweep of the Kingani, under rising ground, apparently the ancient river terrace: the woody "Hillock" from which the district derives its name, lies on the opposite or northern bank; its lay is from north to south, and it is about one mile distant from the stream. Here the scenery is effective. The swift yellow waters, about 50 yards broad, swirl under tall stiff banks, green with tangled vegetation and noble trees, and the conical huts of the cultivators are disposed in scattered patches amongst their luxuriant crops. Passing Kidunda, the route, which is sandy, with lines and scatters of waterworn pebbles, descends two precipitous inclines of sandstone, broken into slabs and flags, and crosses the Manyora, a rough and rocky watercourse, abounding in white quartz blocks, grey and pink syenites, erratic boulders of hornblende used as whetstones and strata of a rude sandstone conglomerate. Thence it spans grass, bush, and forest, close to the Kingani, and finally, leaving the stream on the right hand, or northwards, it traverses sandy soil, and, ascending a wave of land, abuts upon the ford of the Mgeta River.

The Mgeta or "rivulet," a perennial influent of the Kingani, and the main-drain of the upper valley, also rises in the crags of Duthumi. Unfordable in its lower bed during the rainy season, it is crossed by the rudest form of bridge, trees felled on each side, and jammed together by the force of the current—a dangerous contrivance for the transport of heavy goods. The cold and rapid

stream, 30 yards broad, rolling over rock and loose sand, under steep banks of stiff earth, and sunk about 20 feet below the level of the country, never allows the recovery of an article once below the surface beyond the ford : the East African ignores diving, and he has a natural antipathy to the hippopotamus and the crocodile.

At the passage of the Mgeta River the dreaded land of Uzaramo terminates, and the peaceful country of Khutu commences : the former has thus, from east to west, a total breadth of 60 geographical and rectilinear miles, Nzasa and the Mgeta stream forming its limits. Khutu proper, occupying the basin of the Mgeta and the head of the alluvial valley, begins with a Doab* on the western bank of the Mgeta, where a thick and tangled jungle, with a luxuriant and putrescent vegetation, is backed by low grassy grounds frequently inundated. Presently, however, the dense thicket opens with a fine park country peculiarly rich in game. During the dry weather the animals are found in herds travelling to slake their thirst at the river. At other seasons, though the country is too extensive to be shot over by passing caravans, the beasts are timid and scattered. The calabash and the tall trees of the seaboard here give way to mimosas, gums, and stunted thorns ; small land crabs abound in the muddy spots which line the path with slides broken by pits and holes ; whilst ants of many varieties, crossing the road in dense masses, like the close columns of an army on the march, ferociously attack the traveller's naked feet ;† under this infliction asses and cattle become frantic,

* This useful word, which means the land about the bifurcation of two streams, has no English equivalent. "Doab," "Dhun" (Dhoon), "Nullah," and "Ghaut," might be naturalized with advantage in our mother tongue.

† East Africa offers ample opportunities of studying the imperfectly known habits of the tropical formice. The principal varieties known to the people are the following : The Chungu Fando, also called "Siyafu," from the Arabic "Siyáf," is a large black pismire or horse-ant, about half an inch long, whose large head and powerful mandibles enable it to destroy rats and mice, lizards and snakes. It loves damp places upon the banks of rivers and stagnant waters ; it burrows, but never raises hills ; and it appears scattered for miles along the paths. Like the other species, it has neither fear nor sense of fatigue ; it rushes to annihilation without hesitating ; and it cannot be expelled from a hut except by fire or boiling water. Its favourite food is the white ant (Termite). Its bite, which is the preamble to its meal, burns like a redhot needle ; and when it sets to work, twisting itself in its eagerness, it must be pulled in two before it will loose its hold. The mortal enemy of the Siyafu is a large ginger-coloured ant, called, from its painful wound. Maji Moto, or boiling water. In the plantations on the island and the coast of Zanzibar there is a large black pismire whose fetid and corpse-like odour gives it the name of "Chungu Mvundu," or "stinking ant." In Unyamwezi there is a small black species which stings so venomously that the pain equals that inflicted by a young scorpion. Those alluded to in the text are found principally in Uzaramo and Khutu ; they are large-headed, showing possibly that they are, like the Siyafu, the defenders of the republic, who perform the duties of soldiers in their incursions. They show great agility in fixing themselves to the foot or ankle as it brushes over them. In many settlements, but more especially in Khutu, many species of diminutive ants swarm about the

and the caravan breaks into a halting trotting hobble, ludicrous to behold. Crossing a narrow nullah, and entering the dense cultivation which in these lands encircles and almost conceals the settlements, the path, after a 6 h. march, enters the populous district of Kiruru, which hugs the left bank of the Mgazi, a perennial feeder of the Mgeta River. Rain appears constant in this region, and the dank clammy dews of night, the damp and chilly atmosphere of morning, and the fiery "rain-suns" of the noon-day, breed frequent and severe fevers. From Kiruru two lines conduct the traveller, after a march of 15 h., to Zungomero. This tract is sufficient to cause sinking of the heart to those who expect a long journey under similar circumstances. The southern path winds along the Mgazi, through a dense jungle and forest, chiefly of the *Hyphaena* palm, and over dreary savannahs, cut by deep and often unfordable nullahs, running over miry bottoms and networks of roots. This longer line is often pursued in order to cross the higher levels of the "Yegea"-mud, a quagmire here two miles in length, through which the porters plunge like laden asses. Caused by want of waterfall, its only efficient remedy would be "warping," by means of rice-culture. After rains it is neck-deep, and it is never dry except when the moisture has been evaporated by sun and wind during the middle of the north-east monsoon; when above the knee it can scarcely be traversed by men with burdens. After crossing the "Yegea", the path passes through the southern extremity of the Duthumi district, and plunges into a third bush cut with nullahs and deep watercourses. Thence it follows a stream, which, branching from the Mgeta, and anastomosing with it below, forms the river-island of Kisaki. Provisions are procurable on this line, but the people, for good reasons, do not court the visitations of caravans.

The northern path, though scanty in provisions, is preferred as the more direct, when the "Yegea" is feasible. Near Kiruru the thick grass and the humid vegetation, dripping till midday with copious dew, render the black earth greasy and slippery. The more open sections display the jagged and picturesque peaks of the Duthumi highlands rising over the lowlands to the north, and southwards lie detachments of wooded cones paling in the far distance. The path advances under a forest of distorted palms, over nullahs adorned by the Mparamusi and the gigantic Msukulio, and through barrens of low mimosa, everywhere mingled with

habitations, to the extreme discomfort of the inmates. They consume provisions, destroy furniture, and attach themselves particularly to man. It is not uncommon to awake at night and to find the clothes, hair, and ears full of these small plagues. The people try to protect themselves by strewing hot ashes round the feet of their kitandahs or cartels; this is not so efficacious as the Indian plan of isolating the cot by pans of water. These smaller ants keep the house clean, but cleanliness expels them.

desert trees of inordinate stature ; it then crosses the "Yegea," which, on this line, appears during the travelling season in the shape of three swamps of soft and slushy mire, barred with roots and hemmed in by tall sharp grass. A little farther on lie the plantations of sorghum, and after another hour's march, making a total of 6 h. 40 m. from Kiruru, rise the scattered villages of Duthumi.

Duthumi, one of the largest and most fertile settlements in Khutu, is a plain of black earth and sand, choked with vegetation where not corrected by the axe. It is watered by the perennial stream of the same name, which, rising in the highlands, adds its quotum to the waters of the Mgazi, and eventually to the Mgeta and the Kingani Rivers. In such places artificial irrigation is common, the element being distributed over the fields by hollow ridges. The crags of Duthumi* form the northern boundary of the plain. They appear to rise abruptly, but they throw off southerly lower eminences, which diminish in elevation till confounded with the almost horizontal surface of the champaign ; the jagged broken crests and peaks argue a primitive formation. Their lay is to the N.N.W. ; after 4 days' journey, according to the guides, they inosculate with the main chain of the Usagara Mountains, and they are probably the southern buttress of Ngu, or Nguru, the hill region westward of Saadani. This chain is said to send forth the Kingani River, which, gushing from a cave or fissure in the eastern, is swollen by feeders from the southern slopes to a large perennial stream, whilst the Mgeta flows from the western face of the water-parting, and circles the southern base.† The cold temperature of these cloud-capped and rainy highlands, which never expose their outlines except in the clearest weather, affects the plains ; by day bleak north-east and north-west gusts pour down upon the sun-parched plain of Duthumi, and at night the thermometer will sink to 70°, and even 65° F. Water is supposed to freeze upon the heights, yet they are not unhealthy ; sheep, goats, and poultry abound ; betel pepper grows there, according to the Arabs, and, like the lowlands, holcus and sesamum, manioc and sweet potatoes,‡ cucumbers,§ the

* They are so called by the Arabs ; the Africans have a name for each peak and level, but probably none for the whole range.

† In the 'Mombas Mission Map,' the Rwaha, the head-stream of the Rufiji, is made to rise in the mountains of Nguru, in which case its line must cross both the Kingani and the Mgeta rivers.

‡ The *Convolvulus batatas*, in Arabic *Findál*, and in Kisawahili *Kyázi*, grows almost throughout the country. It is planted after the first burst of the rains, as too much humidity rots the root, and it may be gathered as late as October. The people are fond of the young leaves ; for journeys they slice and sun-dry the root, and eat it boiled or drink the decoction ; it is then a nauseous food.

§ Cucumbers, called *khiyár* by the Arabs, and *matango* by the Wasawahili, are of many varieties ; they grow wild in almost every field near the Tanganyika lake. There are two kinds, one large and the other small, round, and of a bright golden yellow ; these are the most common. Ujiji abounds in a small leek-green species, of circular shape, and covered with soft verrucose projections. A fourth variety,

turai,* and beans,† plantains, and sugar-cane,‡ are plentiful. The thick jungle at the base of the hills shelters the elephant, the rhinoceros § in considerable numbers, the gnu,|| and the koodoo—which, however, can rarely be found when the grass is high;—a variety of the ngole—a small tree snake ¶—haunts the patriarchs of the forest, and the chirrup of the mongoose,** which the people enjoy, as Euro-

green but smooth, resembles a pumpkin in size and form. The best, and indeed the only kind cultivated by the Arabs of Unyanyembe, is shaped like the common European cucumber, smooth, green, and about a foot in length. All, except the latter, are a congeries of seeds.

* The Indian turai (*Luffa acutangula*), called by the Arabs Júnásl (?), and in the Kisawahili mdodoki, is a hardy growth, which will thrive in the least fertile lands. It faintly and from afar resembles vegetable marrow.

† Beans flourish throughout the country. The Arabs divide them into two kinds—the fūl (فول), a large variety, supposed to cause flatulence, and the lúbiá (لوبيا), the lupin (?), a smaller species, which disposes to costiveness. Under the names Fi'wi' and Mbárángá, the Washenzi include the white haricot of France, and other red, black, and grey kinds. The other varieties are known by the generic name "khunde."

‡ The mbudá, or sugar-cane, is found only in the best watered provinces. At Ujiji it seems to be indigenous; that grown by the Arabs of Unyanyembe was introduced from Zanzibar. Both are tolerably good for chewing, but for making sugar,—an invention utterly unknown to the Washenzi—they are too poor to be useful. Like several of the grasses, the blade of the sugar-cane at a certain angle cuts like a razor.

§ The rhinoceros is called by the Wasawahili firú or páru; by the Arabs, most ignorantly, el zurráf, a word which we have converted, through the French, into giraffe; the classical name is karkadan (*Gargatan*), from the Pers. kargaden. The white variety (*Rhino. simus*) appears to be extinct in East Africa; the only specimen actually seen by Capt. Speke in Ugogo was the gargatan, or small single-horned black rhinoceros; the people, however, declare that the larger animal with the double armature (*Rhino. Capensis*) is the more common.

The rhinoceros loves the tangled bushy plains and the thick herbage which conceal him from the hunter's eye. He is frequently met with in the table-land of Ugogo and in the wastes of Mgunda Mkhali. The people spear him as they do the elephant, but they are not fond of closing with an old black bull on open ground. The horns, which are carried by every caravan, are sold in the interior according to size. The marrow of the leg-bone is used by the people as a cure for epilepsy, the difficulty of procuring it being probably its title to that distinction.

|| The gnu (*Catoblepas gnu*, locally called "Nyumbu") was seen only in the vicinity of Duthumi. Here he roams over the wastes, and shakes his shaggy mane, prancing and curveting, at the sight of passing caravans. The porters regard him with a wholesome awe, and declare that he is capable of charging them.

¶ Two specimens of the *Dendraspis angusticeps*, common at the Cape and in West Africa, were shot by Capt. Speke. These snakes are of a tender green colour like other tree-climbers, they are especially fond of the mayagea tree, and they seem to live upon insects. They cast the slough about the beginning of the year. The people call them ngole, and justly believe them to be venomous; they ignore the power of tobacco-oil upon serpents, which is so commonly known to their southern brethren. In Khuta also was procured a head of a harmless coronellida, which, according to Dr. Guntner, may prove to be a new species. The fourth specimen procured by Capt. Speke was of the slow-worm type, a glauconia, well known at the Cape.

** The mongoose, called in Africa kitukwa, or ungewichiri, is abundant in the maritime region, but elsewhere rare. It is sometimes tamed in Khuta, and is supposed to protect the hut from rats and snakes; the affectionate little animal is the more useful from the absence of its enemy, the domestic cat. The kitukwa (*M. fasciatus* of the Cape?) is somewhat smaller than the Indian mongoose, and the dark annulations of its fur are more marked and regular. As with the ferrets, it is subject to the "sweats," which, like the distemper in pups, often prove fatal.

peans love the monotonous note of the cricket, is heard in the brakes at eventide. This part of the country, about 6 h. march northward from Duthumi, is called the Inland Magogoni; and it is traversed by the "Mdimu" nullah, which falls into the Mgeta River. The fertile valleys in the lower and southern folds are inhabited by the Wakumbaku (?), and the Wasuop'hanga tribes; the higher elevations, which apparently range from 3000 to 4000 feet, by the Warnguru. They are compelled to fortify themselves against the cold and the villainous races around them. The plague of the land is now one Kisabengo, a Mzegura of low origin, who, after conquering Ukami, a district extending from the eastern flank of the Duthumi hills seawards, from its Moslem diwan, Ngozi, *alias* Kingaru, has raised himself to the rank of a Shene-Khambi. Aided by the kidnapping Moslem coast-clans of Whinde, a small coast town opposite the island of Zanzibar, and by his fellow tribemen of Uzegura, he has transferred by his frequent commandos almost all the people of Ukámi, chiefly Wásuop'hángá and Wárúgúrú, to the slave-market of Zanzibar, and, thus compelled to push his depredations farther west, he has laid waste the lands even beyond the Mukondokwa river valley. The hill tribes, however, still receive strangers hospitably into their villages. They have a place visited even by distant Wazaramo pilgrims. It is described as a cave where a P^thepo or the disembodied spirit of a man, in fact a ghost, produces a terrible subterraneous sound, called by the people Kurero or Bokero; it arises probably from the flow of water underground. In a pool under the cave women bathe for the blessing of issue, and men sacrifice sheep and goats to obtain fruitful seasons and success in war. These hill races speak peculiar dialects, which, according to the guides, are closely connected with Kikhuatu.

Despite the bad name of Duthumi as regards climate, Arabs sometimes reside there for some months for the purpose of purchasing slaves cheaply and to repair their broken fortunes for a fresh trial in the interior. This keeps up a perpetual feud amongst the chiefs of the country, and scarcely a month passes without fields being laid waste, villages burnt down, and the unhappy cultivators being carried off for sale.

On the 12th day after his departure from the coast—or, with slow marching, after 17 stages—the traveller reaches the province of Zungomero, adjacent to Western Duthumi. Those who propose to encamp at the farther villages near the head of the valley, distant about 7 hours, divide the march. The route passes through the cultivation that hedges the settlements, and crosses a steep and muddy bed, coming from the north-west, and called the "Water of Duthumi,"* which, knee-deep even in the dry season, falls a

* In Kisawahili *mto* (of which the plural is *mito*, the incrementative *jito*, and the diminutive *kigito*) signifies any river, rivulet, flowing stream, fiumara, or nullah. The locative particle *ni* is a mere pleonasm in vulgar parlance, "in, near, or about

little lower down, into the Mgazi. The footpath again traverses fields of tobacco and sorghum, under the outlying hillocks of the Duthumi crags. These low cones, like similar formations in India, are not inhabited; they are more malarious than the plains, the surface is rocky, and the forests, not ceasing as in higher elevations, extend from base to summit. Beyond the cultivation the route plunges into a jungle, where the European traveller sees Africa in its worst form, and realizes every preconceived idea of its aspect, at once hideous and grotesque. The general appearance is a mingling of forest and jungle, which, contracting the horizon to a few yards, is equally monotonous to the eye and palling to the imagination. The greasy ground, veiled with a thick shrubbery, supports here and there forests of tiger and spear-grass, 15 and 16 feet high, of which every blade is a finger's breadth, and the holcus cane is stiffer than the rattans of an Indian jungle. On all sides the view is closed by towering trees which put to shame the English chesnut and elm, often clothed from root to twig with ponderous columns of verdure, the growth of huge epiphytes, which, clustering upon the tops, assume the semblance of enormous birds'-nests. The footpaths, almost choked in places by the encroaching bush, are crossed by lianas, creepers, and climbers, thick as the largest cables,—some connecting the trees in a curved line, others straight stretched down the trunks, others winding about their supports in all directions, frequently crossing one another like network, and stunting the growth even of the vivacious calabash by coils like ropes tightly encircling the neck. The earth, ever drenched with rain, emits the odour of sulphuretted hydrogen, and, in some parts, a stranger might suppose a corpse to be hidden behind every bush. To this sad picture of miasma the firmament is a fitting frame: a wild sky, where heavy purple nimbi, chased by chilling gusts and raffles, dissolve in large-dropped showers; or a dull gray expanse, which lies like a pall over the plain. In the finer weather the atmosphere is pale and sickly: its mists and vapours seem to concentrate the rays of the oppressive "rain-sun." The sensation experienced at once explains the apathy and indolence, the physical debility and the mental prostration, which are the gifts of those climates whose moist heat and damp cold are equally uncomfortable and insalubrious. And that no feature of malaria may be wanting to complete the picture, filthy heaps of the rudest hovels, built in holes in the jungle, shelter a few miserable inhabitants, whose frames are lean with constant intoxication, and whose limbs, distorted by ulcerous sores, attest the hostility of Nature to mankind. Such a revolting scene is Eastern Africa,

the river," for "the river." Geographers, therefore, who write about the river Matoney (Mtoni)—Mr. Cooley's 'Geography of Nyassi,' p. 23, and Mr. Macqueen's 'Geography of Central Africa,' p. 118—are somewhat vague in their nomenclature.

from Central Khutu to the base of the Usagara mountains, where less rain and a higher elevation cause the country to be ventilated and the people to enjoy comparative health and comfort.

Running through this fetid flat, the path leaves on the left sundry shallow salt-pits, which, according to the Arabs, are wet during the dry and dry during the wet seasons. Presently, after breaking through another fence of *holcus*, it enters Bakera, where, in 1857, rose a little hamlet, ringed with papaws and plantains, and in 1859 a thick growth of grass waved over the ground-marks of hearth and roof-tree. Resuming its course through *holcus* and rice swamps, it passes, after the second mile, the Mtoni Bakera, a muddy runnel from the north-west, and then again crossing fields and jungle it fords the Mgazi river, which here flows in a sandy bed under deep earthbanks. Another strip of jungle and a shallow rill lead to the cultivation and villages of Zungomero.

Zungomero, the head of the great river valley, is a plain, enclosed on all sides except the eastern, or the line of drainage. Northwards rise the peaks of Duthumi; westwards the little Wigo hills and other spurs of Usagara, uncultivated and uninhabited, though the country is populous up to their feet; and southwards lie detached cones of similar formation, steep, rocky, and densely wooded. The sea-breeze is strong, but beyond its influence the atmosphere is sultry and oppressive. Owing to maritime influences the kosi, or south-west wind, sometimes continues till the end of July. The normal day, which varies little throughout the year, begins with the light milky mist which forms the cloud-ring; by degrees nimbi and cumuli come up from the east, investing the crags of Duthumi, and, when showers are imminent, a heavy line of stratus bisects the highlands and lies upon the surface of the plain. At the epochs of the lunar change rain falls once or twice during the day and night, and, when the clouds burst, a fiery sun sucks up poison from the earth's putridity. The early nights are oppressive; towards the dawn condensation causes a copious deposit of heavy dew, which even the people of the country dread. The humidity of the atmosphere corrodes everything with which it comes in contact; clothes feel limp and damp, paper—soft and soppy by the loss of glazing—acts as a blotter; boots, books, and botanical collections are mildewed; metals are ever rusty; the best percussion caps, though labelled waterproof, will not detonate; gunpowder, unless kept from the air, refuses to ignite, and wood becomes covered with fungi. Finally, a prolonged halt causes general sickness amongst the porters and slaves of a caravan.

Yet Zungomero is the great bandári or centre of traffic in the eastern, as are Unyanyembe and Ujiji in the middle and the western regions. Lying upon the main trunk-road, it must be traversed by the up and down caravans, and, during the travelling

season, between June and April, large bodies of some thousand men will pass through it every week. Kilwa formerly sent caravans to it, and the Wanyamwezi porters have often passed to that port by the "Mwera road"—a line now closed. The Arab merchants usually pitch tents, preferring them to the leaky native huts, full of hens and pigeons, rats and mice, snakes and lizards, crickets and cockroaches, gnats and flies, and spiders of hideous appearance, where the inmates are constantly routed by swarms of bees and are ever in imminent danger of fires. The armed slaves accompanying the caravan seize the best huts, which they either monopolize or share with the hapless inmates, and the porters stow themselves away under the projecting eaves of the habitations. The main attraction of the place is the plenty of provisions. Grain is so abundant that the inhabitants exist almost entirely upon the intoxicating pombe, or holcus-beer,—a practice readily imitated by their visitors. Bhang* and the datura plant,† growing wild, add to the attractions of the spot. Meat is scarce: the only cattle are those driven down by the Wanyamwezi to the coast; milk, butter, and ghee are consequently not procurable. A sheep or a goat rarely costs less than a shukkah, or four cubits of "domestics," here worth 25 cents. The same will purchase only two fowls; and eggs and fruit—chiefly papaws and plantains, cocos and limes—are at fancy prices. For the shukkah 8 rations of unhusked holcus, or 4 measures of rice—which must here be laid in by those travelling up country—or 5 cakes of tobacco, equal to about 3 lbs., are generally procurable. Thus the daily expenditure of a large caravan ranges from 1 dollar to 1 dollar 50 cents.

* This is a fine large species of the *Cannabis Indica*, the bang of Persia, the bhang of India, and the benj of Arabia, the fasukh of northern, and the dakha of southern Africa. In the low lands of East Africa it grows before every cottage door. As in hot climates generally, the fibre degenerates, and the plant is only valued for its narcotic properties. The Arabs smoke the sun-dried leaf with, and the Africans without, tobacco, in huge waterpipes, whose bowls contain a quarter of a pound. Both ignore the more luxurious preparations, momiya, kusumba and hashish, ganja and sebzi, charas and maajun. Like the "jangli" or jungle (wild) bhang of Sindh, affected by kalandars, fakirs, and other holy beggars, this variety, contracting the muscle of the throat, produces a violent whooping-cough, ending in a kind of scream, after a few long puffs, when the smoke is inhaled; and if one man sets the example the others are sure to follow. These grotesque sounds are probably not wholly natural; even the boys may be heard practising them; they appear to be a fashion of "renowning it;" in fact, an announcement to the public that the fast youths are smoking bhang.

† The *Datura Stramonium*, called by the Arabs and by the Wasawahili "muranhi," grows in the well-watered plains; it bears a large whitish flower and a thorn-apple, like that of India. The heathen, as well as their visitors, dry the leaves, the flowers, and the rind of the rootlet, which is considered the strongest preparation, and smoke them in a common bowl, or in a water-pipe. This is held to be a sovereign remedy against zik el nafas (asthma) and influenza; it diminishes the cough by loosening the phlegm. The Washenzi never make that horrible use of the plant known to the Indian dhaturiyah, or datura-poisoners. Many accidents, however, occur from ignorance of its violent narcotic effects.

worth of cloth in the Zanzibar market. The price, however, fluctuates greatly, and the people will shirk selling even at any price.

The same attractions which draw caravans to Zungomero render it the great rendezvous of an army of touters, who, whilst watching for the arrival of the ivory traders, amuse themselves with plundering the country. The plague has now spread like a flight of locusts over the land. The Wakhutu, a timid race, who, inferior to the Wazaramo, have no sultan to gather round, are being gradually ousted from their ancient seats. In a large village there are seldom more than three or four families, who occupy the most miserable hovels, all the best having been seized by the touters or pulled down for firewood. These men—slaves, escaped criminals, and freemen of broken fortunes, flying from misery or punishment on the coast—are armed with muskets and sabres, bows and spears, daggers and knobsticks. They carry ammunition, and thus they become too strong for the country people. When rough language and threats fail, the levelled barrel at once establishes the right to a man's house and property, to his wife and children. If money runs short, a village is fired by night, and the people are sold off to the first caravan. In some parts the pattering of musketry is incessant, as it ever was in the turbulent states of independent India. It is rarely, however, necessary to have recourse to violence, the Wakhutu believing their tyrants to be emissaries, as they represent themselves, from His Highness the Sultan of Zanzibar, and from the chief Arab nobles, offer none but the most passive resistance, hiding their families and flocks in the bush. Thus it happens that towards the end of the year nothing but a little grain can be purchased in this land of marvellous fertility.

As has been mentioned, these malpractices are severely reprobated by His Highness the Sultan, and when the evil passes a certain point remedial measures are taken. A Banyan, for instance, is sent to the coast with warnings to the diwans concerned. But what care they for his empty words, when they know that he has probably equipped a similar party of black buccaneers himself? and what hope can there be of reform when there is not an honest man in the country to carry it out? Thus the Government of Zanzibar is rendered powerless, and improvement can be expected only from the hand of Time. The Wakhutu, indeed, often threaten a deputation to entreat the Arab Sultan for protection in the shape of a garrison of Baloch. This measure has been retarded for sound reasons: no man dares to leave his house for fear of finding it a ruin on his return; moreover, he would certainly be shot if the touters guessed his intention, and, even if he escaped this danger, he would probably be sold, on the way to the coast, by his truculent neighbours the Wazaramo. Finally, if the people succeeded in

their wishes, would not a Baloch garrison act the part of the man who, in the fable, was called in to assist the horse against the stag? The Arabs, who know the temper of these mercenaries, are too wise ever to sanction such a "dragonnade."

The reader will readily perceive that he is upon the slave-path, so different from travel amongst the independent tribes of Southern Africa. The traffic practically annihilates every better feeling of humanity; yet, though the state of the Wakhutu appears pitiable, the traveller cannot practise pity: he is ever in the dilemma of maltreating or of being maltreated, of cheating or of being cheated. Were he to deal civilly and liberally with this people he would starve: it is vain to offer a price for even the necessaries of life; it would certainly be refused because more is wanted, and so on beyond the bounds of possibility. Thus, if the touter did not seize a house, he would never be allowed to take shelter in it from the storm; if he did not enforce a "corvée," he must labour beyond his strength with his own hands; and if he did not fire a village and sell the villagers, he might die of hunger in the midst of plenty. Such in this province are the action and reaction of the Old Evil.

From Central Zungomero to the nearest ascent of the Usagara Mountains is a march of five hours. The route, emerging from the cultivated districts, follows on the north the "Wigo" * Hills, probably so called from the fishing-weirs in the stagnant streams and in the Mgeta river that flows through the plain below. On the left, or southwards, and distant 4 to 5 miles, is a line of low detached cones: at the foot of one, somewhat larger than its neighbours, rises the thermal spring known to the people as the Májí yá W'hetá, the "jetting water," "geyser," or "Fontaine qui bouille." Its position is a gentle rise between the hill-base and a cleared plain valley, surrounded by high walls of jungly forest. Its watershed is from south to north. The water boils and bubbles out of a white mud, here and there encrusted with oxide of iron. Upon the surface lie caked and scaly sheets of a calcareous tufa expressed by the spring, and around it are detached boulders, blackened, probably, by the thermal fumes. The earth is dark, sometimes sandy, and sprinkled over with broken pieces of quartzite and sandstone; at other places a screen of brab-trees backs the bald expanse of mud. The area is about 200 feet, but the centre of ebullition is unapproachable, owing to the heat and the instability of the ground. According to the guides, it is subject to

* The Wigo, or weir, is like that of Western India. On the coast it is a curve or half-moon of perpendicular sticks, cut short enough to be submerged by the high tides when the fish enter, and generally open on the land-side, whence the water wholly retires. Near the principal coast-settlements there are sometimes half a dozen of these traps. They are found throughout the interior; and in the stagnant ponds the waters are raised by dams or grass-bundles at one end, so as to cause a current, which draws the prey into the weir.

occasional eruptions, when the water bursts out with violence, and pieces of lime are flung high in the air. Animals are said to refuse it, and tales are told of wild beasts having sunk into the seething mire.

With the Mgeta River on the right hand, the traveller passes by a path, almost invisible, through dense grass and trees, and presently enters the luxuriant cultivation surrounding the last and westernmost villages of Khutu. The settlements are of the most miserable description, some of the abodes being composed of a few short sticks, tied together at the top like piled muskets, and loosely covered with a few armfuls of *holcus*-stalks.* The rats are busy in the fields, and the plundered peasants dig deep holes in the path. At almost every corner stands a trap;† no animal food is wasted in these lands. Beyond the villages the path fords six times the sandy bed of the Mgeta, whose steep banks support two screens of shrubs and grass. Beyond the sixth passage the road falls into the gravelly river-beds, with the stream flowing in the other half of the course under well-wooded masses of primitive hill. After again thrice fording the cold and muddy water, which, in the dry seasons, is ankle or thigh deep, according to the breadth, that never exceeds 100 yards, the road passes through some clearings, where porcupines ‡ and squirrels § were observed, and, diverging a few yards from the Mgeta, it ascends ground that rises about 300 feet above the level of the plain. This, the thirteenth and westernmost station of the maritime regions, is the frontier of the Usagara Mountains, and the débris encumbering the base of its first escarpment. It is distinguished as Mzizi Mdogo, or the "Little Tamarind," from the "Greater Tamarind" station, which lies beyond. There is no vestige of building, no sight nor sound of man, near this spot; the blood-feud and the infernal slave-trade have made a howling desert of the land.

Yet, truly delightful is the sudden change from the nebulous skies, the fog-driving gusts, the pelting rain, the clammy mists veiling a gross growth of fetor, the damp, raw cold rising, as it were, from the ground, and the alternations of fiery and oppressive

* This is the straw, or rather the cane, of the *Holcus sorghum*, much used in African huts.

† The Mtego is a trap for rats and small birds, an artless contrivance in the shape of a cage, made of rush or split bamboo, planted in the ground near some cover. A little doorway is made in one of the sides, and a boy hid behind a bush waits till the prey begins to nibble at the bait, and then, creeping up, bars exit with his hand.

‡ The porcupine (*Hystrix*), called by the Arabs Kunfuz, and by the Washenzi Nunda, is found in the drier provinces of E. Africa. As usual amongst savages, it is eaten; the Arabs, however, reject it as impure—pig-like.

§ The Khomba or *Sciurus* of E. Africa has been often carried to India. It is a sturdy little animal, with a long thick fur of dark brown, shot with green on the back, and with a bright red belly, muzzle, and points.

heat ; in fact, from the cruel climate of the valley to the pure, sweet mountain-air, alternately soft and balmy, cool and reviving, and to this aspect of the clear blue skies lending their tints to the highland ridges, well wooded with various greens. Dull mangrove, dark jungle, and monotonous grass, are here supplanted by tall solitary trees, and a Great Dismal Swamp, cut by a network of nullahs, gives way to dry healthy slopes, with short steep pitches, and gently shelving hill. The beams of the large sun of the equator dance gaily upon the blocks and pebbles of red, yellow, and dazzling snowy quartz, whilst the bright sea-breeze waves the summits of the trees, from which depend graceful lianas, and wood-apples large as melons. Monkeys hide and seek, chattering behind the boles at the iguana, which, with its painted scale armour, basks upon the stream-banks, and white-breasted ravens caw ; whilst doves coo on the well-clothed boughs, hawks soar in the transparent sky, and the field-cricket chirps like the Italian cigala in the shadowy bush. And everywhere, from air, from earth, from the hill-slopes above, and from the marshes below, the hum, the buzz, the loud continuous voice of insect-life, through the length of the day, speaks out its natural joy. By night the soothing murmurs of the rivulet at the hill's base rise mingled with the faint sweep of the rustling breeze ; the scream of the night-heron, the bellow of the bull-frog in his distant swamp, the hyæna's whimper, and the fox's whining bark, sound through the silence like the music of the wild. Instead of the cold night-rain and the soughing of the blast, the moonbeams lie like sheets of snow upon the ruddy highlands, and the stars hang like golden lamps from their dome of infinite blue. The eye never wearies with this scene, for, contrasting with the splendours around, still lies in sight unhappy Zungomero ; lead-coloured above, mud-coloured below, wind-swept, fog-veiled, and deluged by clouds, that rarely venture upon the mountains of Usagara.

After these details concerning the physical geography of the first or maritime region, it will be advisable to notice its political features, especially the ethnology of its present tenants. These are the Wazaramo, the Wakhutu, and their great subtribe the Waziraha, who form the staple of population ; the Wadoe and the Wazegura are minor and immigrant tribes.

The Wazaramo are no exception to the rule of barbarian maritime races : they have, like the Somal, the Galla, the Wangindo, the Wamakua, and the Kafir, come into contact with a civilization sufficiently powerful to corrupt without subjugating them ; and, though cultivators of the ground, they are more dreaded by caravans than any tribe from the coast to the Lake Region. They are bounded eastward by the thin line of Moslems fringing the maritime regions, westward by the Wakhutu, northward by the Kingani River, and on the south by the tribes of the Rufiji. The Wazaramo,

or, as they pronounce their own name, Wazalamo, claim connection with the semi-nomade Wakamba, who have, within traditional times, migrated to the north-west of Mombasah. Their dialect, however, proves them to be congeners of the Wakhutu, and distinct from the Wakamba. As in East Africa generally, it is impossible to form the remotest idea of the number of families, or of the total of population. The Wazalamo number many sub-tribes, the principal of which are the Wákámbá, which must not be confounded with the northern people of the same name, and the Wáp'hangárá.

These Negroids are able-bodied men, tall and straight, compared with the coast-clans, but they are inferior in development to most of the inner tribes. The complexion, as usual, varies greatly. The chiefs are often coal-black, and but few are of light colour. This arises from the country being a slave importer rather than exporter; and here, as among the Arabs, black skins are preferred. The Mzaramo never circumcises, except when becoming a "Mhájí;"* nor does this tribe generally tattoo, though some adorn the face with three long cicatrized cuts, like the "Mashali" of Meccah, extending down each cheek from the ear-lobes to the corners of the mouth. Their distinctive mark is the peculiarity of dressing their hair. The thick wool is plastered over with a coat of ochreish and micaceous clay, brought from the hills, and mixed to the consistency of honey with the oil of the sesamum or the castor-plant.† This pomatum, before drying, is pulled out with the fingers to the ends of many little twists, which circle the head horizontally, and is thus formed into a single or a double line of knobs, the upper being above, and the lower below the ears, and both stiff, as if affected with the plica polonica. The contrast between these garlands of small red bilberries and the glossy black skin is effective enough. The clay, when dry, is washed out with great trouble by means of warm water—soap is ignored—and by long combing with the fingers. Women wear the hair-thatch like men; there are, however, several styles. It is usually parted in the centre, from the crinal front line to the nape of the neck, and allowed to grow in a single or double dense

* Mhájí, a pilgrim. The Arabic word provided with an African prefix is given in E. Africa, as Shaykh in W. India, to the rare converts won by El Islam from Fetissism. It by no means implies that the bearer has accomplished a pilgrimage.

† Two varieties of the Ricinus, or castor-plant, grow wild near almost every village, and the larger, when unpruned, attains as in India, the height of 18 to 20 feet, with a strong woody bole, which exists for many years. The Mbono (*Jatropha curcas?*) is the Gumpal of W. India; it is a coarse bean with fetid oil, a powerful purgative, and, when burnt, it foults the lamp with its greasy soot. The Mbarika, or Palma Christi, is the Frindi of W. India. The bean is smaller, and the oil less offensive. The E. Africans toast and pound the produce in mortars, and, adding hot water, they skim off the oleaginous scum, which is used as an unguent as well as a medicine. The Arabs more sensibly prefer it "cold-drawn."

thatch, ridging the head breadthwise from ear to ear: this is coloured or not coloured, according to the wearer's taste. Some of the Wazaramo, again, train lumps of their wool to rise above the region of Cautiousness, and very exactly simulate bears' ears. The face is usually lozenge-shaped, the eyes are somewhat oblique, the nose is flat and patulated, the lips tumid and everted, the jaw prognathous, and the beard, except in a few individuals, is scanty. The sebaceous odour of the skin amongst all these races* is overpowering: it is emitted with the greatest effect during and after excitement either of mind or body. The expression of countenance is wild and staring, the features are coarse and harsh, the gait is loose and lounging;—the Arab strut and the Indian swagger are unknown in East Africa. The Wazaramo tribe is rich in albinos; three were seen in the course of a single day. They much resemble Europeans of the leucous complexion; the face is quite bald; the skin is rough, and easily wrinkles in long lines, marked by a deeper pink; the hair is short, sharp-curling, and coloured like a silkworm's cocoon, and the lips are red. The eyes have grey pupils and rosy "whites:" they appear very sensitive to light, and they are puckered up so as to distort the countenance. The features are unusually plain, and the stature appears to range below the average. The people call these *leucothiops* Wazungu, "white men," and they entertain no prejudice against them.

The Wazaramo tribe is wealthy enough to dress well: almost every man can afford a shukkah or loin-cloth of unbleached cotton, which he stains a dirty yellow, like the Indian gerua, with a clay dug in the subsoil. Their ornaments are extensive girdles and bead necklaces of various colours, white discs, made from the base of a certain sea-shell,† and worn single on the forehead or in pairs upon the breast. A massive ring of brass or zinc encircles the wrist. The decoration peculiar to the tribe, and common to both sexes, is the mgoweko, a tight collar or cravat, 1 to 1·50 inches broad, of red and yellow, white and black beads, with cross-bars of different colours at short intervals. Men never appear in public without an ostentatious display of arms. The usual weapons, when they cannot procure muskets, are spears, bows and arrows, the latter poisoned,‡ and "sime," or long knives like the Somali daggers, made by themselves with imported iron. The chiefs are generally seen in handsome attire; embroidered Surat caps bound with a tight snowy turban of a true African shape, which contrasts well with the black skins and the short, stiff, double-peaked beards below. The

* Subjects like the odour of the African race, their general physical and mental peculiarities, in fact all which concerns the whole people, will be treated of in Chapter XII. These remarks, appended to the several itineraries, are intended mainly to specify the characteristics of the tribes or minor divisions.

† See Chapter XII.

‡ For a general account of archery in E. Africa see Chapter XIV.

body-garment is a loin-cloth of showy Indian cotton or Arab check ; some prefer the long shirt and the kizbao or waistcoat affected by the slaves at Zanzibar. The women are as well dressed as the men—a circumstance rare in East Africa. They wear blue loin-cloths* and checks, with a profusion of white discs and bead necklaces, and a t'hando, a little square of the same material about 6 inches long, hanging like a bib upon the upper bosom, which is thus partially concealed from view. Short coils of thick brass wire are tightly wound round the wrists, the arms above the elbows, and the ankles ; and—hideous perversion of taste!—the breasts are tied down and elongated by a cord fastened tight round the bosom under the armpits, placing the waist where civilised Europe was wont to do in the earlier part of the 19th century. The child is carried in a cloth at the back. Many of these women have the tibia bowed in front by carrying heavy waterpots at too early an age ; when not burdened they have a curious mincing gait, they never veil their faces, and they show no shame in the presence of strangers.

The habitations of the Wazaramo are far superior in shape and size to those of Khutu, and, indeed, to any on this side of Unyamwezi. Their buildings generally resemble the humbler sort of English cow-house, or of Anglo-Indian bungalow. In poorer houses the outer walls are of holcus canes, rudely puddled ; the better description are built of long and broad pieces of myombo and mkora bark,† propped against strong uprights inside, and bound to them by horizontal split bamboos tied outside with fibrous cord. The heavy pent-shaped roof, often provided with a double thatch of grass and reeds, projects its ample eaves, which are high enough to admit a man without bending ; these are supported by a long cross bar resting on perpendicular tree-trunks, barked and smoothed, forked above, and firmly planted in the ground. Along the outer marginal length of this verandah lies a border of large logs polished by long sittings. The interior is dark and windowless, and party-walls of holcus or grass cane divide

* The blue stuff commonly used throughout E. Africa is unbleached cotton cloth, dyed with indigo at Bombay and elsewhere. It is called Kaniki, or Kiniki, to distinguish it from Khami, or Merkani, the white "domestics" imported from America. In the interior it forms as it were the silver currency, the shukkah, or cloth 6 feet long, of which two compose the doti, being on an average worth about one-third less than the same sizes of American domestics. In the chapter upon the subject of imports ample notices concerning these and other stuffs will be given.

† The Mkora (Mkola), which is the Mkambakofi of Zanzibar Island, the Myombo, and other trees, afford excellent bark-sheets for houses and kraals. The Mkora supplies large and heavy planks for doors, and the whole trunk is sacrificed to a single length. Of its yellow wood, which is heavy, hard, close-grained, and capable of taking a high polish, the huge mortars that act as mills throughout the country are made, and the smaller branches are converted into bows and walking-staves. The bark is peculiarly adapted for the African kilindo, a kind of bandbox.

it into several compartments. The list of furniture comprises a dwarf cartel about 4 feet long by 16 inches broad, upon which even the married couple manages to make itself comfortable; a stool cut out of a single block, a huge wooden mortar, black earthen pots, gourds, ladles of coco-nut, cast-off clothes, whetstones,* weapons, nets, and in some places creels for fishing. Grain is ground upon an inclined slab of fine-grained granite or syenite, sometimes loose, at other times fixed in the ground with a mud plaster;—the classical Eastern handmill is unknown in this part of Africa. The inner roof and its rafters, shining with a greasy soot, in wet weather admit drenching lines of leakage, and the only artifice applied to the flooring is the tread of the proprietors. The door is a close hurdle of parallel holcus-straw bound to five or six cross-bars with strips of bark.

In a village there may be from four to twelve of these "bungalows;" the rest are the normal haycock and beehive hut of Africa. Where enemies are numerous the settlements are palisaded; each has, moreover, but a single entrance, which is approached by a narrow alley of strong stockade, and is guarded by a thick planking that fits into a doorway large enough to admit cattle. Caravans are welcomed and housed when they dare to appear in these villages; a house is assigned to them, the large drum is at once bound to a post planted in the clear central space, and a dance and song and general intoxication represent the rites of African hospitality. But the Ngoma Ku, or the great drum, collects the inhabitants of all the neighbouring settlements in an armed gathering, not knowing whether feast or fight await them. Moreover, women are appointed to attend the stranger, and, in case of sickness or accident happening to any one of the village, they are severely interrogated concerning the morality of the stranger: after a little decent lying, they are sure to confess their peccadilloes, and the apparent hospitality is forthwith converted into extortion and violence. The Wazaramo, like the Wagogo, and unlike other East Africans, are jealous of their women; still "damages" will act, as they have acted in other lands, salves to wounded honour and broken heart.

The Wazaramo are an ill-conditioned, noisy, boisterous, violent, and impracticable race. A few years ago they were the principal obstacle to Arab and other travellers entering into East Africa. But the seizure of Kaole and other settlements by the late Prince of Zanzibar has now given strangers a footing in the land. After tasting the sweets of gain, they have somewhat relented; quarrels, however, between them and the caravans are still frequent. The P'házi, or chief of the district, demands a certain amount of cloth for

* The larger are called Suko'o, the smaller Kino'o. They are usually of the same material—hornblende blocks.

free passage from all merchants on their way to the interior ; from those returning he takes cattle, jembe or iron hoes, shokah or hatchets, in fact, whatever he can obtain. If not contented, his clansmen lie in ambush and discharge a few poisoned arrows at the trespassers : they never have attempted, like the Wagogo, to annihilate a caravan ; in fact, the loss of one of their number causes a general panic. They have hitherto successfully resisted the little armies of touters that have almost desolated Khutu, and they are frequently in hostility with the coast settlements. The young men sometimes set out on secret plundering expeditions to Bagamoyo and Mbuamaji, and enter the houses at night by mining under the walls. The burghers attempt, but in vain, to defeat them, by burying stones and large logs as a foundation : their superior dexterity has originated a superstitious notion that they possess a peculiar "medicine," a magic spell called "Ugumba," which throws the household into a deep trance. When a thief is caught in flagrant delict, his head soon adorns a tall pole at the entrance of the settlement : it is not uncommon to see half a dozen bloody or bleached remnants of mortality collected in a single spot. When disposed to be friendly the Wazaramo will act as porters to Arabs, but if a man die his load is at once confiscated by his relatives, who, moreover, insist upon receiving his blood-money, as if he had been slain in battle. Their behaviour to caravans in their own country depends upon the strangers' strength : many trading bodies therefore unite into one before beginning the transit, and even then they are never without apprehension.

The Wazaramo chiefs are powerful only when their wealth or personal qualities win the respect of their unruly subjects. There are no less than five orders in this hereditary master-class. The P'hazi is the headman of the village, and the Mwene Goha is his principal councillor ; under these are three ranks of elders, the Kinyongoni, the Chumá, and the Káwambwá. The headman, unless exceptionally influential, must divide amongst his "ministry" the blackmail extorted from travellers. He cannot receive a private message without communicating it to his subjects ; in these lands all news must be public property. A messenger charged with a state secret is brought before a mixed assembly of all ranks and ages, and there he replies categorically to each question as it is addressed ; anything reserved for the chief's ear must be communicated secretly at another time. The P'hazi usually fills a small village with his wives and families ; he has also large estates, and he personally superintends the labour of his slave-gangs. He cannot sell his subjects except for two offences—ugoni or adultery, and ucháwi or black magic. The latter crime is usually punished by the stake ; in some parts of the country the roadside shows at every few miles a heap or two of ashes with a few

calcined and blackened human bones mixed with bits of half-consumed charcoal which tell the tragedy that has been enacted there. The prospect cannot be contemplated without horror; here and there, close to the larger circles where the father and mother have been burnt, a smaller heap shows that some wretched child has shared their terrible fate, lest, growing up, it should follow in its parents' path. The power of conviction is wholly in the hands of the Mganga or medicine-man, who administers, by boiling water, an ordeal called *bágá* or *kyápo*. If the hand after being dipped show any sign of lesion, the offence is proven, and the sentence is instantly carried into execution.

Instinctively conscious of their moral wants, the Washenzi throughout this portion of East Africa have organized certain customs which have grown to laws. The first is the *sáre** or brother oath. Like the "manred" of Scotland, the "munh bola bhai" of India, and similar fraternal institutions amongst most of the ancient tribes of barbarians where sociability is a passion, it tends to reconcile separate or adverse interests, to modify the feuds and discords of savage society, and principally to strengthen those that need an alliance. In fact, it is a contrivance for choosing relations instead of allowing Nature to force them upon man, and the flimsiness of the tie between brothers born in polygamy has doubtless tended to strengthen it. The ceremony, which is confined to adults of the male sex, is differently performed in the different tribes. Amongst the Wazaramo, the Wazegura, and the Wasagara, the two to be "brothers" sit on a hide face to face, with legs outstretched to the front and overlapping one another; their bows and arrows are placed across their thighs, whilst a third person, waving a sword over their heads, vociferates curses against any one that may "break the brotherhood." A sheep is then slaughtered, and its flesh, or more often its heart, is brought roasted to the pair, who, having made with a dagger or razor an incision in each other's breasts close to the pit of the stomach, eat a piece of meat smeared with the blood. Among the Wanyamwezi and the Wajiji the cut is made below the left ribs or above the knee; each man receives in a leaf his brother's blood, which, mixed with oil or butter, he rubs into his own wound. An exchange of small presents generally concludes the rite. It is a strong tie, as all men believe that death or slavery would follow an infraction. The Arabs, to whom the tasting of blood is unlawful, usually perform it by proxy. The slave "fundí," *manciples*, stewards, or *fattori*,

* This is the common word in the interior. The Kisawahili express the rite by a verb, *ku chanjyáná*; the Arabs call it "el mushatibah," from the incising; and the Makololo of South Africa, according to Dr. Livingstone (chap. 24), "kasendi." Asiatics, though they adopt brothers and sisters, have no fixed ceremony like the Africans.

of the caravans become brothers even with the Washenzi whenever they expect an opportunity of utilizing the connexion.

The second custom is more peculiar. The East African dares not appropriate an article found upon the road, especially if he suspect that it belongs to a fellow tribeman. He believes that a "kigambo,"* an unexpected calamity, slavery or death, would follow the breach of this custom. At Zungomero a watch, belonging to the Expedition, was picked up by the country people in the jungle, and was punctually returned, well wrapped round with grass and leaves. But subsequent experience makes the traveller regret that the superstition is not of a somewhat more catholic and comprehensive character.

The religion of the East African will be treated of in a future chapter. The Wazaramo, like their congeners, are as little troubled with ceremony as with belief. In things spiritual as in things temporal they listen to but one voice, that of "Adá," precedent or ancient custom. The most offensive scoffer or sceptic in Europe is not regarded with more abomination than the man who in these lands would attempt to touch an iota of Adá.

There are no ceremonies on birth occasions and no purification of women amongst these people. In the case of abortion or of a still-born child they say, "he hath returned," that is to say, to home in earth. When the mother perishes in childbirth, the parents claim a certain sum from "the man that killed their daughter." Neither on the continent nor at Zanzibar do they bind with cloth the head of the new-born babe. Twins† are usually sold or exposed in the jungle.‡ If the child die, an animal is slaughtered for a general feast, and in some tribes the mother does a kind of penance. Seated outside the village, she is smeared with fat and flour and is exposed to the derision of people who surround her, hooting and mocking with the most obscene jests and gestures. To guard against this calamity, the Wazaramo and other tribes are in the habit of vowing that the babe shall not be shaved till manhood, and the mother wears a number of talismans, bits of wood tied with a thong of snake's skin, round her neck, and beads of different shapes round her head. When carrying her offspring, which she rarely leaves alone, she bears in her hand what is technically called

* Kigambo, a diminutive form, is peculiarly applied to this punishment. "Magainbo," the plural of the root, is sometimes used in a similar sense, but more often to signify a subject of complaint, or a causeless quarrel, synonymous with the French "querelle d'Allemand."

† Twins are here called Wápachú, and by the Arabs of Zanzibar Shukúل شکول. This appears to be a barbarous expression; the classical word tau'amán is unknown to all except to the learned of Zanzibar.

‡ According to the Rev. J. F. Schön, it is an insult amongst the Ibos of W. Africa to raise two fingers and to say, "You gave birth to twins!" Twins are there exposed to beasts; and the mother is divorced and driven from society.

a kirangozi, a "guide" or "guardian," in the form of two sticks a few inches in length, bound with bands of particoloured beads. This article, made up by the Mgángá, is placed at night under the child's head, and is carried about till it has passed the first stage of life. The kirangozi is intended to guard the mother's treasure against the malevolent spirits of the dead: that almost universal superstition, the Evil Eye, though an article of faith amongst the Arabs, the Wasawahili, and the Wamrima, is unknown to the inner heathen.

A name is given to the child without other celebration than a debauch with pombe: this will sometimes occur at the birth of a male, when he is wanted. The East Africans, having few national prejudices, are fond of calling their children after Arabs and other strangers: they will even pay a sheep for the loan of a merchant's name. There must be many hundred Sayyid Saids and Sayyid Majids now in the country; and as during the eighteen months' peregrination of the East African Expedition every child born on and near the great trunk-line was called Muzungu (the white man), or Muzungu Mbáya (the wicked white man), the Englishman has also left his mark in the land. Anything, however, is an improvement upon their names: a prime favourite, for instance, is Máví ya Gnombe, or "Cow-dung;" another Kuffakwema, "Die-good;" a third Na-daka-Málí, "I want wealth." The period of ablactation, as in South Africa, is prolonged to the second or third year: may this account, in part, for the healthiness of the young and for the almost total absence of debility and deformity? Indeed, the nearest approach to the latter is the unsightly protrusion of the umbilical region, sometimes to the extent of several inches, owing to ignorance of proper treatment; but, though conspicuous in childhood, it disappears after puberty. Women retain the power of suckling their children to a late age, even when they appear withered grandames. No instances, however, are known of the faculty attributed to the male breast by some philosophers; in fact, the idea of man's milk is derided.* Until the child can walk without danger, he is carried by the mother, not on the hip, as in India, but on the bare back for warmth, a sheet or skin being passed over the child and fastened at the parent's breast. Even in infancy he clings like a young simiad, and the peculiar formation of the African race renders the position easier by providing a kind of seat upon which he subsides: the only part of the body exposed to view is the little coconut head, with the beady-black eyes in a state of everlasting stare. Finally, the "kigogo," or child who cuts the two upper incisors before the lower, is either put to death or he is given away or sold to the slave-merchant, under the impression

* Dr. Livingstone (chap. 6) quotes Baron Humboldt, and seemingly inclines to belief. But, supposing the exceptionary process to take place, may it not be more frequent amongst some races than amongst others? The most popular instances are those quoted by travellers in the Americas.

that he will bring disease, calamity, and death into the household.* The Wasawahili and the Zanzibar Arabs have the same superstition: the former kill the child; the latter, after a khitmah or perfection of the Koran, make it swear, by nodding its head if unable to articulate, that it will not injure those about him. Even in Europe it may be remembered the old prejudice against children born with teeth is not wholly forgotten.

Amongst the Wazaramo there is no limit to the number of wives, except the expense of wedding and the power of supporting a large establishment. Divorce is signified by presenting to the wife a piece of holcus-cane: if a sensible woman she at once leaves the house, and, if not, she is kicked out. There is no more romance in the affair even before marriage than in buying a goat. The marriageable youth sends a friend to propose to the father: when the latter consents, his first step is, not to consult his daughter—such a proceeding would be deemed the act of a madman—but to secure for himself as many clothes as possible, from six to twelve doti, or even more, besides a preliminary present which goes by the name of kiremba (*kilemba*), his “turban.” This, however, is a kind of settlement which is demanded back if the wife die without issue; but if she bear children, it is preserved for them by their grand-parents. After the father the mother puts in her claim in behalf of the daughter; she requires a kondáví, or broad parti-coloured band of beads worn round the waist and next the skin for a peculiar purpose; her mukájyá or loin-cloth fastened about the loins during parturition; and her wereko, or sheet in which the child is borne upon the back. In the interior the settlement is made in live-stock, varying from a few goats to a dozen cows. This weighty point duly determined, the husband leads his wife to his own home, an event celebrated by drumming, dancing, and extensive drunkenness. Throughout Unyamwezi, as will afterwards be explained, he takes up his abode in his wife's house, which must not be confounded with her paternal home. The children born in wedlock belong to the father.

When a man or a woman is at the point of death, the friends

* The Ibos of Western and the Bechwanas of S. Africa, also, according to the missionaries, put to death “children who cut their upper front teeth first,” and insult one another by saying, “You first cut your top teeth.”

This and many other instances of superstition, which, to judge from their artificial character, appear traditional rather than natural and spontaneous to human instinct, would point to a close intercourse in ancient times between now distinct and distant nations. It may have resulted from the peculiar formation of the African continent, which presents none but comparatively modern obstacles—slavery, for instance—to free communication. That men still cross the to us utterly unknown regions of Central Africa, is proved by the fact that, in the Polyglotta Africana, or ‘Vocabularies of the Hundred African Languages,’ collected at Sierra Leone by the Rev. Mr. Koelle, missionary of the Church Missionary Society (London, 1854), several, for instance the Kauyika (Kinyika) and Maravi, are pure Zangian. In p. 15 we learn that five men from the Maravi country reside in Sierra Leone.

assemble, and the softer sex sometimes sings, howls, and weeps : the moribund is allowed to depart life upon the kitandah, or cartel. There is, however, little demonstrative sorrow amongst these people, and, having the greatest dread of disembodied spirits, all are anxious to get rid of the corpse and its appertainings. The Wazaramo, more civilized than their neighbours, bury their dead stretched out and in the dress worn during life : their graves have already been described.

The industry of Uzaramo will occupy but few sentences. Before the great rains of the year set in, the land must be weeded, and scratches are made with a hoe for the reception of seed. The wet season ushers in the period for copal digging : the proceeds are either sold to travelling traders, or are carried down to the coast in mákándá—mat-sacks, and are sold to the Banyans. Bargaining and huckstering, cheapening and chaffering, are ever the African's highest intellectual enjoyments, and he does not fail to stretch them to their utmost limits. After the autumnal rains during the azyab, or the north-east monsoon, the grass is fired, when the men, seizing their bows, arrows, and spears, indiscriminately slaughter bird and beast—an operation which, yearly repeated, accounts for the scarcity of animal life so remarkable in this Animals' Paradise. When all trades fail, the Mzaramo repairs to the coast, where, despite his bad name, he usually finds employment as a labourer.

The murder of the unfortunate M. Maizan is too intimately connected with the history of the Wazaramo to be passed over in silence. Since that fatal day the tribe has declined in power and consequence ; its finest possessions on the coast have been torn from it by the Arabs, and there is every probability that in a few years this proud and violent race will be reduced to the abject degradation of the Wakhutu. As it is, few murders have been more pregnant in their consequences than that of M. Maizan to East Africa.

M. Maizan landed at Zanzibar island about the end of 1844. Arrived at the age of twenty-six, he had amply qualified himself by study for travel, and he was well provided with instruments and outfit. The latter was of a nature calculated to excite savage cupidity, as was proved by the fact that his murderer at once used the gilt knob of a tent-pole as a neck-ornament, and, tearing out the works of a gold chronometer, converted it into a tobacco-box. He has been charged with imprudence in carrying too much luggage—a *batterie de déjeuner*, a *batterie de dîner*, and so forth. Also the difficulty of procuring porters caused him to leave his armed men behind in charge of his goods, and thus contributed to his destruction. Such was his misfortune. But he had judged rightly, when undertaking a journey in countries where

outfit cannot be renewed, * to provide himself with all the materials for comfort. On such explorations a veteran traveller would always attempt to carry as much, not as little as possible, with him, of course prepared to abandon all things and to set out single-handed whenever the necessity might occur. It is easy to leave a superfluity, and the best preparation for severe "roughing it" is to enjoy as much ease and comfort as possible.

But M. Maizan fell upon evil times at Zanzibar. Dark innuendoes concerning French ambition—that nation being ever suspected of a desire to establish itself in force on the coast of East Africa *—filled Hindu and Hindi with fear for their profits. These men necessarily influenced the inhabitants of the island and the sea-coast, who probably procured the cooperation of their wild brethren in the interior. For the purpose of learning the Kisawahili, M. Maizan delayed nearly eight months at Zanzibar, and, seeing a French vessel entering the harbour, he left the place precipitately, fearing a recall. Vainly also M. Broquant, then consul de France, had warned him against his principal confidant, a noted swindler, and Lieutenant-Colonel Hamerton had cautioned him to no purpose that his glittering instruments and his numerous boxes, all of which would be supposed to contain dollars, were dangerous. He visited the coast thrice before finally landing, thus giving the Wasawahili time and opportunity to mature their plans. He lowered himself in the eyes of the Arabs by "making brotherhood" with a native of Unyamwezi. Finally, fearing Asiatic apathy and dilatoriness, he hastened into the country without waiting for the strong armed escort promised to him by His Highness the late Sayyid Said.

These were grave errors; but they were nothing in comparison with that of trusting himself unarmed, after the fatal habit of Europeans, and without followers, into the hands of an African chief. How often has British India had to deplore deaths "that would have dimmed a victory," caused by recklessness of danger or the false shame which prevents men in high position from wearing arms where they may be at any moment unexpectedly required, lest the safe mediocrities around them should deride such excess of cautiousness!

After the rains of 1845 M. Maizan landed at Bagamoyo, a little settlement opposite the island of Zanzibar. There leaving the forty musketeers, his private guard, he pressed on, contrary to the advice of his Mnyamwezi brother, escorted only by Frédérique, a Malagash or Comoro man, and a few followers, to visit P'hazi

* For the interests of European trade at Zanzibar it is regrettable that M. Guillain, in a work lately printed by order of his Government (Paris : Arthur Bertrand, Rue Hautefeuille, No. 21), should have permitted himself to indite such a sentiment as the following :—" Nous aurons quand nous le voudrons, Madagascar, notre Australie à nous, et des comptoirs secondaires échellanés le long des côtes du Zanguebar, du Golfe d'Adel, et de l'Abyssinie " (Preface, p. 28).

Mazungera, the chief of the Wákámbá subtribe of the Wazarama, at his village of Dege la Mhora. He was received with a treacherous cordiality, of which he appears to have been completely the dupe. After some days of the most friendly intercourse, during which the villain's plans were being matured, Mazungera, suddenly sending for his guest, reproached him as he entered the hut with giving presents to other chiefs. Presently working himself into a rage, the African exclaimed, "Thou shalt die at this moment." At this signal a crowd of savages rushed in, bearing two long poles. Frédérique, then present, was saved by the P'hazi's wife: he cried to his master to run and touch her, in which case he would have been safe; but the traveller had probably lost presence of mind, and the woman was removed. The unfortunate man's arms were then tightly bound round a pole lashed crosswise upon another, to which his legs and head were secured by a rope tied across the brow. In this state he was carried out of the village to a calabash-tree, about fifty yards on the opposite side of the road. The inhuman Mazungera first severed all his articulations, whilst the war-song and the drum sounded notes of triumph. Finding the sime, or double-edged knife, somewhat blunt, he stopped, when in the act of cutting his victim's throat, to whet the edge, and, having finished the bloody deed, he concluded with wrenching the head from the body.

Thus perished an amiable, talented, and highly educated man, whose only fault was rashness—too often the word for enterprise when Fortune withholds her smile. The savage Mazungera was disappointed in his death. The object of the torture was to discover, as the Mganga had advised, the place of his treasures, whereas the wretched man only groaned and implored forgiveness of his sins, and called upon the names of those friends whose advice he had neglected. The P'hazi then attempted to decoy from Bagamoyo the forty musketeers left with the outfit, but in this he failed. He then proceeded to make capital of his foul deed. When Snay bin Amir, a Maskat merchant, of whom more anon, appeared with a large caravan at Dege la Mhora, Mazungera demanded a new tribute for free passage; and, as a threat, he displayed the knife with which he had committed the murder. But Snay proved himself a man not to be trifled with.

Frédérique returned to Zanzibar shortly after the murder, and was examined by M. Broquant. An infamous plot would probably have come to light had he not fled from the fort where he was confined. Frédérique disappeared mysteriously. He is said now to be living at Marungu, on the Tanganyika Lake, under the Moslem name of Muhammád.* His flight served for a pretext to

* Mohammed. The Wasawahili, whose African organs cannot endure a final consonant, and will inflict an ultimate vowel and a penultimate accent, whether right or wrong, upon all borrowed words, have made considerable havoc amongst

mischiefous men that the prince was implicated in the murder : they also spread a notoriously false report that Mazungera, an independent chief, was a vassal of the suzerain of Zanzibar.

In 1846 the brig-of-war *Le Ducoüedic*, of the naval division of Bourbon, M. Guillain, Capitaine de Vaisseau, commanding, was charged, amongst other commercial and political interests, with insisting upon severe measures to punish the murderers. In vain His Highness Sayyid Said protested that Mazungera was beyond his reach ; the fact of the robber-chief having been seen at Mbuan-maji after the murder, was deemed conclusive evidence to the contrary. At length the Sayyid despatched up country three or four hundred musketeers, mercenaries and slaves, under command of Jumah the late, and of Bori the present, Diwan of Saadani. The little troop marched some distance into the country, when they were suddenly confronted by the Wazaramo, commanded by Hembe, the son of Mazungera, who, after skirmishing for a couple of days, fled wounded by a matchlock-ball. The chief result of the expedition was the capture of a luckless clansman who had beaten the war-drum during the murder. He was at once transferred to Zanzibar, and was passed off by those transparent Eastern diplomatists as the P'hazi Mazungera. For nearly two years he was chained in front of the French consulate ; after that time he was placed in the fort heavily ironed to a gun under a cadjan shed, where he could hardly stand or lie down. The wretch died about a year ago, and Zanzibar lost one of its lions.

After the slaughter of M. Maizan the direct route through Dege la Mhora was long closed, it is said, and is still believed, by a "ghul," a dragon or huge serpent, who, of course, was supposed to be the demon-ghost of the murdered man. The reader will rejoice to hear that the miscreant Mazungera, who has evaded human, has not escaped divine punishment. The miserable old man is haunted by the P'hepo or spirit of the guest so foully slain : the torments which he has brought upon himself have driven him into a kind of exile ; and his tribe, as has been mentioned, has steadily declined from its former position with even a greater decline in prospect. The jealous national honour displayed by the French Government on the occasion of M. Maizan's murder has begun to bear fruit.

Next in order to the maritime Wazaramo on this line of road are the Wakhutu, to whom many of the observations upon the subject of their neighbours equally apply. Their territory extends from the Mgeta River to the mountains of Usagara, and in breadth from the Duthumi crags to the Rufiji River in the south.

The Wakhutu are mentally as well as physically an inferior

Arabic names. Abubekr, for instance, has become *Bekkari*, Khamis *Khamisi*, Usman *Tini*, Shaykh *Sheke*, Nasib *Shibi*. "Ibn"—the son of—is converted into Wa, the possessive prefix; e.g. Khamis bin Usman reappears as *Khamisi Wa Tini*.

race to the Wazaramo. In appearance they are exceedingly dark, and they bear other marks of degradation, the effects of humid heat and miasma. They have no peculiar tattoo, although individuals raise extensive patterns in small cicatrices upon their breasts. The popular head-dress is the clay coating of the Wazaramo, of somewhat modified dimensions; and some of them, who are possibly derived from the Wahiao and other southern clans, have a practice—exceptional in these latitudes—of chipping their incisors to sharp points, which imitate well enough the armature of the reptilia. Their eyes are bleared and red with perpetual intoxication, and they seem to have no amusements but dancing and singing half the night. None but the wealthier can afford to wear cloth; the substitute is a kilt of the calabash fibre,* attached by a cord of the same material to the waist. In women it often narrows to a span, and it would be inadequate to the purposes of decency were it not assisted by an under-clothing of softened goatskin; this and a square of leather upon the bosom, which, however, is often omitted, compose the dress of the multitude. The ornaments are like those of the Wazaramo, but by no means so numerous. The Wakhutu live poorly, and, having no ghee, are contented with sesamum and fresh castor-oil with their holcus porridge. The rivers supply them with the usual mud-fish; at times they kill game. Their sheep, goats, and poultry are reserved for barter on the coast; and, though bees swarm throughout their land, and even enter their villages, they will not take the trouble to make hives.

The proportion of chiefs to subjects seems to increase in the inverse ratio of what is required. Every district in Khutu has its P'hazi or headman, with his minister the Mwene Goha, and inferior chiefs, the Chandumé, the Muwinge, and the Mbárá. These men live chiefly upon the produce of their wide fields, which they sell to caravans; they are too abject and timid to insist upon the blackmail which has caused so many skirmishes in Uzaramo; and the only use that they make of their power is to tyrannise over their villages, and occasionally to organise a little kidnapping. With the aid of slavery and black magic they render their subjects' lives as precarious as they well can: no one, especially in old age, is safe from being burnt at a day's notice. They are civil to strangers, but they are wholly unable to mediate between them and

* These kilts, which exactly resemble those of the "Mop-headed Papuans," are made by the tribes to the north of the Pangani, from the young leaves of the dwarf fan-palm; in Khutu and Usagara from the bark of the mbuyu, or calabash. The fibre is manipulated as in rope-making. Incisions are made in the lower boles of full-grown trees, and plates of bark, three or four feet long, are stripped off by means of a little axe: the hard skin, after softening by maceration, is then removed by beating with a stone; and finally it becomes a substance not unlike coir, which is rubbed between the hands till fit to be twisted into ropes or kilts.

the tribe. The Wakhutu have been used as porters ; but they have proved so treacherous, and so determined to desert, that no man will trust them in a land where prepayment is the first condition of an agreement. Property amongst them is insecure : a man has a vested right in his sister's children ; and when he dies, his brothers and relations carefully plunder his widow and orphans.

The dirty, slovenly villages of the Wakhutu are an index of the character of the people. Unlike the comfortable cottages of the coast, and the roomy abodes of the Wazaramo, the settlements of the Wakhutu are composed of a few straggling hovels of the humblest description—with doors little higher than an English pigsty, and eaves so low that a man cannot enter them except on all-fours. In shape they differ, some being simple cones, others like European haystacks, and others like old straw beehives. The common hut is a circle from 12 to 25 feet in diameter ; those belonging to the chiefs are sometimes of considerable size, and the first part of the erection is a cylindrical framework of tall stakes, or the rough trunks of young trees, interwoven with parallel and concentric rings of flexible twigs and withies, which are coated inside and outside with puddle of red or grey clay. In some a second circle of wall is built round the inner cylinder, thus forming one house within the other. The roof, subsequently added, is of sticks and wattles, and the weight rests chiefly upon a central tree. It has eaves-like projections, forming a narrow verandah, that rests upon horizontal bars, supported by forked uprights. Over the sticks interwoven with the frame, thick grass or palm-fronds are thrown, and the whole is covered with a coat of thatch tied on with strips of tree bark. During the first few minutes of heavy rain, this roofing, shrunk by the parching suns, admits water enough to patch the interior with mud. The furniture of the cottages is like that of the Wazaramo ; and the few square feet which compose the area are divided by screens of wattle into dark pigeon-holes, used as stores, kitchen, and sleeping-rooms. A thick field of high grass is allowed to grow in the neighbourhood of each village, to baffle pursuers in case of need ; and some cottages are provided with double doorways for easier flight. In the middle of the village there is usually a tall tree, under which the men lounge upon cots scarcely large enough for an English child ; and the slaves, wrangling or laughing, husk their holcus in huge wooden mortars. These settlements can scarcely be called permanent : even the death of a chief causes them to be abandoned, and in a few months long grass waves over the remains, rain-washed circlets of charred stakes and straw.

The only sub-tribe of the Wakhutu which deserves notice is the Wazirahá, who inhabit the low grounds below the Mabruki Pass, in the first parallel of the Usagara Mountains. They are

remarkable only for having beards somewhat better developed than in the other East-African races: in sickly appearance they resemble their congeners.

Remain for consideration the Wadoe and the Wazegura. The proper habitat of the Wadoe is between the Watondwe or the tribes of Saadani, on the littoral, and the Wakhwere, near Khutu, on the west; their northern frontier is the land of the Wazegura, and their southern the Gama and the Kingani Rivers. Their country, irrigated by the waters of the Gama, is plentiful in grain, though wanting in cattle; they export to Zanzibar sorghum and maize, with a little "chakazi" or unripe copal.

The Wadoe once formed a powerful tribe, and were the terror of their neighbours. Their force was first broken by the Wakamba, who, however, so weakened themselves, that they were compelled to emigrate in mass from the country, and have now fixed themselves in a region about 14 marches to the north-west of Mombasah, which appears to have been anciently called the land of the Meremongao.* During this struggle the Wadoe either began or, what is more likely, renewed a practice which has made their name terrible even in African ears. Fearing defeat from the Wakamba, they began, in presence of the foe, to roast and eat slices from the bodies of the fallen.† The manoeuvre succeeded; the Wakamba could dare to die, but they could not face the idea of becoming food. Presently, when the Wazegura had armed themselves with muskets, and the people of Whinde had organised their large plundering excursions, the Wadoe lost all power. About ten years ago Jumah Mfumbi, the late Diwan of Saadani, exacted tribute from them, and after his death his sons continued it. In 1857, broken by a famine of long continuance, many Wadoe fled to the south of the Kingani River, and obtained from the Wazaramo lands near Sagesera and Dege lá Mhorá.

The Wadoe differ greatly in colour and in form. Some are tall, well-made, and light-complexioned Negroids, others are almost black. Their distinctive mark—of women as well as men—is a pair of long cuts down both cheeks, from the temple to the jaw; they also frequently chip away the two inner sides of the upper central incisors, leaving a small chevron-shaped hole. This mutilation however is practised almost throughout Intertropical Africa. They are wild in appearance, and dress in softened skins, stained yellow

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† It is probably an ancient practice amongst the Wadoe revived on this occasion. These cannibals preferred the palms of the hands and the soles of the feet, leaving the fleshy and muscular parts to the women, children, and slaves. According to Ptolemy (lib. iv. chap. 8, quoted by Dr. Beke, in a valuable paper on the Nile and its tributaries, published in the 'Transactions of the Royal Geogr. Soc.', vol. xvii. p. 74), on the Barbaricus Sinus—the belt of low land forming Zanzibar—there dwelt a nation of Anthropophagi.

with the bark and the flowers (?) of the mimosa. Their arms are a large hide-shield, spears, bows, and arrows, shokah or little battle-axe, the sime-knife, and the rungu or knobstick. They are said still to drink out of human skulls, which are not polished or prepared in any way for the purpose. The principal chief is termed Mweme; his privy-councillors are called Mákungá (?), and the elders Máná Miráo (?). The great headmen are buried almost naked, but retaining their bead ornaments, sitting in a shallow pit, so that the forefinger projects above the ground. With each are interred alive a male and a female slave, the former holding a mundu or billhook wherewith to cut fuel for his lord in the cold future world, and the latter, who is seated upon a little stool, supports his head in her lap. This custom has been abolished by some of the tribes: according to the Arabs, a dog is now buried in lieu of the slaves. The subdivisions of the Wadœ are numerous.

The Wazegura, who do not inhabit this line of road, require some allusion, owing to the part which they have played in the evil drama of African life. They occupy the lands south of the Pangani River to the Cape Utundwe, and they extend westward as far as the hills of Nguru. Originally a peaceful tribe, they have been rendered terrible by the possession of firearms; and their chiefs have now collected large stores of gunpowder, used only to kidnap and to capture the weaker wretches within their reach. They thus supply the market of Zanzibar with slaves, and this practice is not of yesterday. About twenty years ago the Wazegura serfs upon the island, who had been cheaply bought during a famine for a few measures of grain, rose against their Arab masters, retired into the jungle, and, reinforced by malefactors and malcontents, began, like the Tuchins of Languedoc, a servile war. This raged with the greatest fury for six months, when the governor, Ahmed bin Sayf, maternal uncle to his Highness the late Sayyid Saíd,* brought in a body of mercenaries from Hazramaut, and soon broke the force of this Jacquerie by setting a price upon their heads, and by giving the captives as prizes to the captors. The late exploits of Kisabengo, the Mzagura, have already been alluded to. The Arab merchants of Unyanyembe declare that the road will never be safe until that individual's head caps a pole: they speak with bitterness of heart, for he is known to exact an unconscionable "Blackmail."

The Wazegura are in point of polity an exception to the rule of East Africa: instead of owning hereditary sultans, they obey the loudest tongue, the most open hand, and the sharpest spear. This tends practically to cause a perpetual blood-feud, and to raise up

* The list of rulers of Zanzibar island, according to the Arabs, is—1, the slave Yakút, who died about seventy years ago; 2, the Sayyid el Laghbari, who ruled in the time of Capt. Owen (1822-26); 3, Mohammed bin Sulayman; 4, the slave Almas; 5, Abdullah bin Jumah; 6, Ahmed bin Sayf; 7, Sayyid Saíd, of Maskat.

a number of petty chiefs, who, aspiring to higher positions, must distinguish themselves by bloodshed, and acquire wealth in weapons, the great title to superiority, by slave-dealing. The only occasion when they combine is an opportunity of successful attack upon some unguarded neighbour. Briefly, the Wazegura have become an irreclaimable race, and such they will remain until compelled to make a livelihood by honest industry.

CHAPTER IV.

THE SECOND REGION: THE MOUNTAINS OF USAGARA, IN THE E. AFRICAN GHAUTS.

THE second or mountain region extends from the western frontier of Khutu at the head of the alluvial valley, in E. long. $37^{\circ} 28'$, to the province of Ugogi, the eastern portion of the flat table-land of Ugogo, in E. long. $36^{\circ} 14'$. Its diagonal breadth is 85 geographical and rectilinear miles. Its length cannot be estimated; according to the guides, Usagara is a prolongation of the mountains of Nguru, or Ngu, extending southwards with a gap for the fluviatele valley of the Rufiji to the line of highlands of which Njesa in Uhiao is said to be the culminating apex. Thus this feature would correspond with the eastern Ghauts of the Indian peninsula. The general lay of the range is from north to south; at the point under consideration it is from north by west to south by east, thus forming an angle of $10^{\circ}-12^{\circ}$ with the meridian. As will presently appear, it is divided into three distinct ridges by longitudinal plains. The highest point above sea-level, observed by B. P. therm., is 5700 feet; there are, however, peaks which may rise to 6000 or 6500 feet. The Usagara chain is here of the first order; indeed it is the only range of any importance in a direct line from the coast to Western Unyamwezi: it would hold, however, but a low grade in the general system of the earth's elevations.

Owing to the depression of the basal regions at the seaward slope, there is no general prospect from the east. After bounding the plains of Khutu on the north by irregular bulging lines of rolling hill, the main body of the mountains rises rapidly to the first gradient. Viewed from the west, the counterslope appears a long crescent, with the gibbus to the front, and with the cusps vanishing into the distance. The summit is in the centre of the half-moon, where the profile is somewhat mural and regular; the flanks of the chain, rounded and lumpy cones, intersected by plains, basins, and dhuns, the fractures of the rocky system, denote a primary and igneous origin. Internally the lay, as in granitic formations, is

irregular ; the ridges preserve no general direction, and they appear to intersect one another confusedly. It is to be observed that the opposite slopes of the three several ridges are not equally inclined. In chains fringing a peninsula, the seaward declivities being usually the more abrupt, the landward faces are not only more elongated, but they are also dwarfed, in proportion as the plateau into which they fall is higher from the maritime plains from which they rise. To enter, therefore, is far more toilsome than to return.

From the mingling of lively colours, Usagara is delightful to the eye, after the monotonous tracts of verdure which pall upon the sight at Zanzibar, and in the river-valleys. The sub-soil, as displayed in the deeper cuts of the ravines and nullahs, is granite, greenstone, schist, or a coarse incipient sandstone, brown or green, with sun-blackened strata, much tilted up, which here and there outcrop. In the higher elevations the soil varies in depth from a few inches to 30 feet : it is often streaked with long, irregular bands of pebbles. The colour is either an ochreish brick-red, sometimes micaceous, and encrusted with peroxide of iron, or of a dull grey, which, like a mixture of all the colours, appears dazzlingly white under the sun's rays ; it is the *débris* of comminuted feldspar. The plains and depressions are covered with a black earth ; after a few showers they become a sheet of mud, and, in the dry season, a deeply cracked and level savannah. Where the elevations are overgrown from base to summit with a thin forest, the edges of the greenstone and the sandstone strata appear through a thin brown coat of fertile humus, the gift of decayed vegetation. A fossil bulimus was found at about 2200 feet above sea-level, and large Achatinae, locally called Khowa, are scattered over the surface. On the hill-sides, especially in the lower slopes, are strewed and scattered erratic blocks and boulders, and diminutive pieces of white and waxy, red, yellow, and rusty quartz, with large irregular fragments, and small calcareous nodules of weatherworn "kunker." Where water lies deep the hills and hill-plains are clothed with a thin shrubbery of mimosas and other thorny gums. Throughout East Africa these woods are the only spots in which travelling is enjoyed. Great, indeed, is their contrast with the normal features,—bald yellow fields of glare, fetid bush and grass, and monotonous expanses of dull, dead herbage, concealing mud-swamps and tufty watercourses, whose only varieties are green, greener, and greenest. In these forests the traveller appears often surrounded by a thick wood, which he never reaches, the trees thinning out as he advances. In such favoured tracts on clear and sunny days the scenery is strange and imposing. The earthen base is of a dark red, which is prolonged half-way up the tree-trunks by the ascending and descending galleries of the termite : contrasting with this peculiarly African tint, the foliage, mostly con-

fined to the upper branches, is of a tender and lively green, whose open work admits from above the vivid blue or the golden yellow of an unclouded sky, pure as in the brightest regions of Greece or Italy. In the basins where water is nearer the surface, and upon the banks of watercourses and rivulets, the sweet and fertile earth produces a richly green vegetation, and a gigantic growth of timber, which distinguishes this region from others farther west. Usagara is peculiarly the land of jungle-flowers, and fruit. Their characteristic is a pleasant acidity, a provision of nature in climates where antiseptics and correctives to bile are almost necessities of life. They are abundant, but, being allowed to grow wild, the fleshy parts are undeveloped. In plains the air, heavy with the delicious perfume of the jasmine (*Jasminum Abyssinicum* ?), with the strong odour of a kind of sage (*Salvia Africana*, or *Abyssinica* ?), and with the fragrant exhalations of the mimosa flowers, which stand like golden balls on the bright green boughs, forms a most enjoyable contrast to the fetid effluvia of the dreary swamps of the lowlands. The tamarind, everywhere growing wild, is a gigantic tree. The Myombo,* the Mfu'u,† the Ndábi,‡ and the Mayágeá,§ are of unusual dimensions; the calabash is found 40 to 50 feet in girth; and the sycamore,|| whose favourite habitat is the

* The Myombo is a fine forest tree extending almost from the coast to the Lake Regions, and apparently unknown to the natives of Zanzibar island. It bears a green flower, with the overpowering smell of the Indian jasmines. The fruit is a large greenish pod, containing ten or twelve long hard seeds like acorns, of a brown black colour, and set in cups, which resemble red sealingwax. The coarse bark is used for building houses, and especially kraals; the finer fibre for "basts" and ropes; and the wood makes what Orientals call a hot fire, lasting long and burning well out.

† The Mfu'u in Usagara and Khutu attains considerable size, in Unyamwezi it is a rugged and stunted tree. It bears an edible fruit, somewhat like the smallest crab-apple, containing a stone of inordinate proportions. In Unyamwezi it ripens about October, in Khutu about February.

‡ The Ndábi is a fruit tree abundant in Usagara, Ugogi, and Unyamwezi. It ranges in height from 30 to 45 feet, and its fruit resembles a pale red currant. The taste can be compared to nothing but sweetened gum dissolved in dirty water.

§ The Mayágeá is a stunted tree bearing a large fleshy flower of a rusty murrey red, and gourds about 18 inches long, solid and heavy, depending, some singly, others in bunches, from slender cords. The Arabs pierce a hole in the fruit, churn the inside with a stick, and use the frothy juice of the rind as an application to sluggish sores, which it is said to burn like bluestone.

|| This sycamore, called Mkuyu, far surpasses in appearance the elms and lindens of Europe. Its habitat extends from Egypt, Abyssinia, and Somali-land almost to the southern extremity of E. Africa. The finest specimens in this country are found in Usagara and Ugogi, those of Uzaramo and Unyanwezi being of smaller dimensions. The bole, composed of a pillared mass, averages from 8 to 10 feet in height. The branches extend prodigiously, and are adorned with the richest masses of cool verdure. The fruit, though eaten by travellers, is a poor small berry, all rind and seeds, with a slender title to the name of a fig.

Another wild fig-tree is the Mtamba, resembling the former in general appearance, but differing from it in detail. The leaf is large, heavy, and thick; the fruit is knobbed with green excrescences; and the bole is loftier than that of the Mkuyu. The roots, which in age rise above the earth, draw up a quantity of mould, which, when the tree decays or is destroyed, forms the dwarf mounds that in many parts encumber the surface of the country.

lower counterslope of Usagara, sometimes overshadows a circle whose perimeter is 500 feet. On the steep hill-sides, which here and there display signs of cultivation and clearings of green or sun-burnt grass, grow parachute-shaped mimosas, with tall and slender trunks, and crowned by domes of verdure, rising one above the other like umbrellas in a crowd.

The plains, the basins, and the steps, or facets of table-land found at every elevation, are fertilized by a stripe-work of streams, runnels, and burns, which, anastomosing in a single channel, flow off into the main drain of the country. Cultivation is in patches isolated by thick belts of thorny jungle, and the villages are few and rarely visited. As usual in hilly countries, the settlements are built upon high ridges and the slopes of cones, for rapid drainage after rain, a purer air and fewer mosquitoes, and, perhaps, for protection from kidnappers. The country people bring down their supplies of grain and pulse for caravans. There is some delay and difficulty on the first day of arrival at a station, and provisions for a party exceeding a hundred men are not to be depended upon after the third or fourth marketing, when the people have exhausted their stores. Fearing the thievish disposition of the Wasagara, who even attempt to snatch away a cloth from a sleeping man, travellers rarely lodge near the settlements. Kraals of thorn, capacious circles enclosing straw boothies, are found at every march, and, when burned or destroyed by accident, they are restored before the strangers attempt to bivouac. The roads, as usual in East Africa, are tracks trodden down by caravans and cattle, and the water-course is ever the favourite Pass. Many of the ascents and descents are so proclivitous that donkeys must be relieved of their loads; and in fording the sluggish streams, where no grass forms a causeway over the soft, viscid mire, they sink almost to the knees. The steepest paths are those in the upper regions; in the lower, though the inclines are often severe, they are generally longer, and they are consequently easier. At the foot of each hill there is either a mud or a watercourse dividing it from its neighbour. These obstacles greatly reduce the direct distance of the day's march.

The mountains are well supplied with water, which is sweet after the brackish produce of the maritime valley, and good when not rendered soft and slimy by lying long on rushy beds. Upon the middle inclines the burns and runnels descending from the upper heights form fiumaras of considerable extent, and of a picturesque aspect. The wide and open sole, filled with the whitest and cleanest sand, and retaining pools of fresh clear water, or pitted with shallow wells, is edged by low steep ledges of a dull red clay, lined with glorious patriarchs of the forest, and often in the bed is a thickly wooded branch or shoal-islet, at whose upper extremity heavy drift-wood, arrested by gnarled mimosa-clumps, and screens of shrubs,

attests the violence of the rufous-tinted bore of waves with which a few showers in the upper regions fill the broadest courses. Lower down the channels which convey to the plains the surplus drainage of the mountains are heaps and sheets of granite, with long reaches of rough gravel; their stony walls, overrun with vegetation, tower high on either hand, and the excess of inclination produces after heavy rains torrents like avalanches, which cut their way deep into the lower plains. During the dry season, water is drawn from pits sunk from a few inches to 20 feet in the re-entering angles of the beds. Fed by the percolations of the soil, it unites the purity of springs with the abundance of rain-supplies,—a comfort fully appreciated by down-caravans after the frequent "Tirikeza," or droughty afternoon-marches in the western regions.

The versant of the mountains varies. In the seaward and the central sections streams flow eastward, and swell the Kingani and other rivers. The southern hills discharge their waters south and south-west through the Maroro River, and various smaller tributaries, into the Kwaha, here the name for the upper course of the Rufiji. In the lateral plains between the ridges, and in the hill-girt basins, stagnant pools, which even during the Masika inundate, but will not flow, repose upon beds of porous black earth, and by their profuse herbage of reeds and rush-like grass, with the luxuriant crops produced by artificial irrigation, cause a malarious atmosphere, and a consequent degradation in the people.

The climate of Usagara is cold and damp. It has two distinct varieties, the higher regions being salubrious, as the lower are unwholesome. In the western lower ranges heavy exhalations are emitted by the decayed vegetation, the nights are raw, the mornings chilly and misty, and the days are bright and hot. In the upper heights, near the sources of the Mukondokwa River, the climate suggests the idea of the Mahabaleshwar and the Neilgherry Hills in Western India. Compared with Uzaramo or Unyamwezi, these mountains are a sanatorium. The east wind, a local deflection of the south-east trade, laden with the moisture of the Atlantic and the Indian Oceans, and collecting the evaporation of the valley, impinges upon the seaward slope, and, ascending, is relieved from atmospheric pressure, and is condensed by a colder temperature; thence the frequent precipitation of heavy rain, and the banks and sheets of morning cloud which veil the tree-clad peaks of the highest gradients. As the sun waxes hot, the air acquires a greater capacity for carrying water; and the results are a milky mist in the basins, and in the upper hills a wonderful clearness, broken only by the thin cirri of the higher atmosphere. After sunset, again, the gradual cooling of the temperature causes the deposit of a copious dew, which renders the nights peculiarly pleasant to a European. The diurnal sea-breeze which is felt in the

slope is unknown in the counterslope of the mountains, where, indeed, the climate is much inferior to that of the central and eastern heights. As in the Sewalik Hills, and the sub-ranges of the Himalayas, the sun is burning-hot during the dry season, and in the rains there is either a storm of thunder and lightning, wind and rain, or a stillness deep and depressing, with occasional gusts of a wind whose distinct moaning shows the highly electrical state of the atmosphere. The Masika, here commencing in early January, lasts three months, when the normal easterly winds shift to the north and the north-west. The Vuli, confined to the eastern slopes, occurs in August, and as on the plains frequent showers fall between the vernal and the autumnal rains.

The people of Usagara suffer in the lower regions from severe ulcerations, from cutaneous disorders, and from other ailments of the plain. Higher up they are healthier, though by no means free from pleurisy, pneumonia, and dysentery. Fever is common, more acute in the range of swamps and decomposed herbage, milder in the well-ventilated cols and on the hill-sides. The type is rather a violent bilious attack, accompanied by remittent febrile symptoms, than a regular fever. It begins with cold and hot fits, followed by a copious perspiration, and sometimes inducing delirium; it lasts as a quotidian or a tertian from four to seven days; and though the attacks are slight, they are followed by great debility, and by want of appetite, of sleep, and of energy. This fever is greatly exacerbated by exposure and fatigue, and it seldom fails to leave behind it a legacy of cerebral or visceral disease,—dysentery or diarrhoea.

The mountains of Usagara are traversed from east to west by two main lines; the Mukondokwa on the northern and the Kirin-gawana on the southern line. The former was closed until 1856 by a chronic famine, the result of such a neighbourhood as the Wazegura and the people of Whinde on the east, the Wahumba and the Wamasai northwards, and the Warori on the south-west. In 1858 the mountaineers, after murdering by the vilest treachery a young Arab trader, Salim bin Nasir, of the Bu Saidi, or the royal clan of Zanzibar, attempted to plunder a large mixed caravan of Wanyamwezi and Wasawahili, numbering 700 or 800 guns, commanded by a stout fellow, Abdullah bin Nasib, called by the Africans Kisesa,* who carried off the cattle, burned the villages, and laid waste the whole of the Rubeho or western chain. The Mukondokwa, which spans the three several ridges, and which tra-

* The heathen Africans, unable to manage, even with their Kisawahili modifications, the Arabic names, invariably nickname the resident Arab merchants after their own fashion. Almost all are derived from some personal quality, as "Kidogo," Mr. "Little;" and not unfrequently they are grossly satirical, as "Msopora."

verses the most characteristic scenery of Usagara, will be described stage by stage. In the Kiringawana, or the southern route, winding amongst the tamer and less interesting levels, only the few stages which present a novelty are offered to the reader.

From Mzizi Mdogo, the station situated on the lowest gradient of the Usagara Mountains, to Ugogi, their western limit, are 17 khambi or stages, which may be accomplished by caravans, when in light marching-order, in three weeks. The first is a hill-side kraal, called Chya K'henge (of the iguana*), a march of 4 h. 30 m. The path lies over a succession of short steep hills, with a brownish red soil, dotted with blocks and stones thinly veiled in the upper parts with grass and a sprinkling of tall calabashes, and already displaying signs of aridity in the growth of aloetic† and thorny plants, the cactus‡ and the asclepias, § the milk-bush || and the stunted mimosa. Near the Mgeta River, which is again forded six times, the vegetation is tall and thick, the grasses obstruct the path, and in the dense jungle the cowhage (*Dolichos pruriens*), ¶ and the stiff reeds here known as the wild sugar-cane annoy the half-naked porters. Thus bounded, and approached by steep, stony, and muddy inclines, the stream shrinks to a mountain torrent, in places hardly 50 feet broad, the flow is swift, the depth during the dry season varies from 1 to 4 feet, and the waters are dyed by the soil a ruddy brown, whilst the bed is sandy and sometimes rocky, with boulders of primitive formation, streaked with snow-white quartz. Before the end of the march the path climbs up a short steep pitch of rock and root, with a deep bank to the river on the right, which renders it dangerous for laden asses. The Khambi is on the southern side, which is clothed with a dense thicket, impassable except where a path has been cut by the axe. At this point the traveller takes a pleasurable leave of the Mgeta River, which already nears its source in the hills of Duthumi. The air of these "Tamarind Hills" is pure and wholesome, and the distant prospects

* These animals are the harmless crocodiles of the *Periplus* (ch. 15); they are still found in the island of Zanzibar and on the mainland; there are several varieties. Like the Maharattas of W. India, the people eat these huge lizards.

† There are several varieties of this plant, the most common being the Somali hig or haskul.

‡ A cactus, with four-angled branches, flourishes throughout the country; in Unyamwezi, and on the steep hills that border the Tanganyika Lake, its bole is hard and woody, and its broad, fleshy attachments rise in cup shape often twenty feet high.

§ The larger asclepias is a weed throughout the land, and the people ignore its uses in Arab technology.

|| The mtupa, spurge-wort, or milk-bush of India (a euphorbia), attains in E. Africa the dimensions of a tree; in some parts it forms around the villages tall walls of metallic lustre, and an impervious shade truly grateful to the sight. The Wanyamwezi use the burning juice, after toasting the twigs in hot ashes like potatoes till the milk loses its acridity, as a stimulant in ophthalmia.

¶ This plant is not used medicinally by the people, who regard its fetid flowers and bristly legume only as a noxious weed.

of mountain and rock, and vistas of plain and river, are truly enjoyable.

The next march, which completes the passage of the "Tamarind Hills," crosses a country broken by dry nullahs or rather ditches, traverses a seam of forest with a deep woody ravine on the right, and meets with two obstacles for laden animals, a muddy swamp full of watercourses and the upper bed of the Rufuta, a nullah dry during the hot season, with high and precipitous earth-banks. Then winding along a hill-flank to avoid a bend in the bed, the path plunges into the sole of the Rufuta. This main drain of the lower levels rises, according to the guides, from the ground, and flows after rains into the Mgeta. Many little cuts and nullahs from the north and north-east, the south and south-west, convey to it the surplus moisture of the adjoining highlands. The sole, which varies from 3 to 16 feet in breadth, winds abruptly round the hills; it is either of deep sand or clay, sopped with water, which, in the upper bed, becomes a thin fillet about ankle-deep. Now sweet, then salt, its mud is tinged in places with a solution of iron, showing, when stagnant, bright prismatic and iridescent tints. The windings of the bed are short and sharp; when narrow, the tall grasses of the banks meet across it, and after a few yards of "gut" it again widens. The walls are in some parts earth, in others blocks of grey syenite, which here and there encumber the bed; and on the right, near the end of the stage, the hills fall in almost perpendicular masses of sandstone, out of whose chinks twist up the gnarled roots of lofty trees, corded with creepers, and overgrown with parasites; whilst dangling from twines sometimes 50 feet long, fruits like footballs depend over the traveller's head. The lower banks, when not choked with rush, are overgrown with the brightest verdure, and with the feathery bamboo * bending and rising with the wind. After a march of 4 h. 30 m. the path, turning from the bed, winds up a steep and broken hill on the left bank and abuts upon a kraal on the summit of a cone almost at the base of the Goma Pass. It is announced by an outlying hut or two, set aside for porters suffering from the smallpox, and the many skeletons that appear on this day's march show the effect of hard work upon hard fare. The little beehive huts of the Wakaguru (?) † and the Wakwivi, subtribes of the Wasagara, appear from afar half-buried in the forest-

* The mwanzo or bamboo, the representative of the tropical grasses, grows in jungles about the country; the largest are found on the seaward slopes of Usagara, the plains of the Malagarazi River, and the mountains surrounding the Tanganyika. This cane never attains the full Indian size. The lesser variety, popularly called "Ringall" in India, and there made into walking-sticks, was not remarked in E. Africa. The people employ the bamboo for many small purposes, the split lengths bind the thatch upon almost every roof. The Arabs prefer it, on account of its lightness, to stronger materials for the poles of their light travelling tents.

† There is some doubt about the existence of this tribe. The Arabs, however, agreed in their accounts of it, and translated the name "dwellers in high places."

nooks on the distant hill-tops. The people are rich in flocks and grain, but a sad experience has taught them to shun intercourse with strangers, whether Arabs or Wasawahili, Wamrima or Wanyamwezi : in happier days the road was lined with large villages, of which now not a trace remains.

The third march ascends the Goma Pass of the Rufutu, or the eastern chain, so called by the Arabs from the nullah which drains it ; the inhabitants of the country have probably no general name. This is a long and toilsome stage, requiring at least 7 h., and heavily laden men prefer to halve it. The footpath winds along the hill-sides, with deep ravines to the right, and presently, after plunging into a clear forest of tall scattered trees, between whose trunks are visible, on both sides, in distant perspective far below, long rolling tracts of wooded land, it arrives at the foot of a steep hill, which must be climbed. The ascent is a kind of staircase, composed of earth-steps bound with strong tenacious roots : the stones thickly strewn about are chiefly of schist, micaceous grit, and a sandstone showing the presence of iron. The summit of this "kloof," which was ascertained to rise 2235 feet above sea-level, leads to an easy descent along the flank of a hill, which commands on the left hand a fair bird's-eye view of cone and ridge rising and falling in blue waves on a scale gradually decreasing till they subside into a long level line of hazy horizon. Upon a grassy rise, to the right of the road, called Mfu'uni, from a species of wild fruit-tree, the wearied Pagazi find the remains of a kraal, and at its base a runnel of pure water, which derives its name from the hill. From this point the path tops the last step of the Pass by an easy ascent. Here the country is thickly wooded, the hills are crowned with trees, the ravines are a mass of tangled verdure, and from the dub* and other grasses rises a sickening odour of decay. The morning dews and the fiery suns of noon are in this part of Usagara the fomites of severe fevers. From the flat summit of the range the route descends rapidly at first, but it soon stretches out into gentler slopes unlike those of the sharp seaward face. In the long expanse below there are 12 distinct rises and 15 several falls, separated by lines of half-dried nullahs choked with ill-savour'd grasses. As the rain-catching peaks are left behind, the slopes of red sand begin to show sunburnt herbage and tufty grass ; the earths of lions become numerous, and the aloetic plants which bespeak an arid soil again meet the eye. Nearing the end of the stage, the path fords the Zonhwe, a stream of sweet water flowing to the west, under high banks bearing a dense jungly bush in a bed of mire and grass. About 2·50 m. from this point a kraal is built upon the junction

* The dub-grass of India (*Cynodon dactylon*, Royle) is abundant in this and in other parts of E. Africa. In India it is a nutritive and a favourite food for animals, but in Africa the asses, especially those from Zanzibar, seem to avoid it.

of the Muhama line and the Whinde road, which here falls in from the coast. Zonhwe is a new settlement of Waziráhá, who support themselves by selling a few fowls and a little holcus at the rate of 32 rations per shukkah to caravans. Travellers usually halt here either to rest after the fatigues of the passes, or to prepare for three days of semi-starvation.

From Zonhwe the next stage is Muhama, a march of 4 h. 45 m. The road falls easily westward down a long grassy and jungly incline, cut by several nullahs, of which the most considerable is a branch of the Muhama. This is a dry sandy bed, containing in hot weather stagnant pools, to which large game flock by night; the usual high herbage clothes its banks, and its apparent course winds to north-west by west. Beyond the Muhama begins rolling ground, with masses of dwarf-hill flanking a low bottom which renews all the ill-favoured scenery of Zungomero. Again, the land, a mass of putrid grass, displays the papaw, the dwarf fan-palm, and the hyphaena; the calabash and the myombo, the holcus and the maize, are of luxuriant dimensions: deep rat-holes, enlarged by the boy-hunters, break the path, and at times the caravans are dispersed by swarms of wild bees. The Muhama or "Fan-palm," a large nullah running west and by south, gives its name to the district, which contains two settlements of Wángindo and Mán-dandú huntsmen, probably fugitives from their homes near Kilwa. The country is rich in game, from the guinea-fowl to the wild buffalo;* and the elephant and various kinds of antelopes† are found on the broad plain to the west. Muhama is the utmost limit of the Vuli or Little Rains. The luxuriance of the vegetation is explained by the vicinity of water, and the higher levels are seldom

* The mbogo, or jungle ox (*Bos Caffer* of S. Africa), abounds through E. Africa, in the river plains where water is plentiful. It is a fine animal, somewhat larger than the common-sized English ox, with uniform dun skin, never particoloured like the tame breeds, and with thick, black-brown horns, from twelve to thirteen inches broad at the base, diverging outwards and incurving towards the points, which, in large specimens, are distant about three feet from each other; they are separated by a narrow channel, which in age becomes a solid mass of bone. These beasts are as dull of comprehension as they are fierce and powerful; and affecting particular spots, they afford several chances of a successful shot to the fundi, or shikari, of the caravans. The Africans kill them with arrows. The flesh is eaten, but it is considered peculiarly heating and bilious; the hide is preferred to that of tame animals for thongs.

† E. Africa wants the vast variety of antelopes which enrich the list of southern Fauna. Besides the gnu and the steinbok, the saltiana and the pallah—which affords excellent venison—there are little antelopes about the size of an English hare, called smiyá by the people; these have reddish coats and diminutive horns. The suangura, or sungula, is somewhat larger than the saltiana: the people declare that the stags, even when full grown, have no horns, which are peculiar to the hind. In Khutu a specimen was shot by Capt. Speke, which proved to be a fine male hartebeest. The horns of the oryx were frequently seen, but the animal did not meet the eye. In the rounded hilly ground near the coast Capt. Speke saw a double-horned antelope, which could not be identified, but resembles the chouka singa, or *Tetraceros quadricornis* of Nepaul.

seen without a cap of purple rain-cloud. Here caravans usually halt to collect grain and to prepare for their long desert marches.

From Muhamma to Makata, the fifth station, is a journey of 6 h. 30 m. across the lateral plain* which separates the Rufuta from the Mukondokwa range, lying to the west, towards which the country gently shelves. It is enclosed on both sides by low lines of distant hill, and cut by steep nullahs : game abounds in the short thick grass, and the lofty Palmyra,† with its majestic bulging column, which renders it so difficult to climb, is a novel feature in the scenery. The approach to the kraal is denoted by a dead level of dry caked and cracked mud, showing the effects of extensive inundation. A large encampment, affected by down caravans, lies on the near side of the "Makata," a long river-like tank, whose lay is east by north. The oozy banks of this water, which is said, after heavy rains, to join the Mukondokwa River, are fringed with liliaceous and other large aquatic plants ; the water is potable, but the spot is vexed by legions of hungry mosquitos.‡ The up-caravans encamp in a kraal on the western bank of the water, the porters sensibly declining to commence the day's work with hard labour, and fearing lest a sudden fall of rain should compel them to intemperate halts. Throughout the country, in such places, there are two distinct khambi, one on each side of the obstacle, whether this be a river, a pass, or a populous clearing. In the latter case they always unload at the farther end of the cultivation, prepared, in case of a fray, to escape into the jungle, without running the gauntlet of the villages.

A march of 4 h. 30 m. leads from Makata to Myombo, the "River of the Myombo Tree." The road begins over a dead plain,

* The feature of ground in English called a valley is in these lands found only in the alluvial form, and even this, with its horrid and sedgy aspect, fails to suggest the ideas of placid rural beauty which Europeans attach to the term. The local succedaneum is the dhun of India, an insensible prolongation of the mountain slopes ; the lowest line of the depression forms the sole of a winding nullah. This African "Bondei" thus resembles the "Wady," except that the Arabian formation is usually cultivated and populous, whereas the Africans fear the miasma and the mosquitos engendered by its profusion of fertility. In South Africa, we are told by early travellers, the Dutch "valley" was applied to a lake or swamp.

† This palmyra (*Borassus flabelliformis*) is called by the people mvumo, like the hyphaena. It is scattered throughout the country, but it is more common in Western Unyamwezi than elsewhere. In the district of Msene an intoxicating toddy is drawn, as in India, from the cut frond. Elsewhere it is little used, as the E. African in the interior is not a climbing animal. It is the deleb-palm of the White Nile.

‡ The maringouins, or mosquitos, in E. Africa are less troublesome than might be expected from the nature and position of the country. Except near their breeding places, the back waters on river banks and the margins of muddy pools, these piping pests give little trouble. Upon the Tanganyika Lake they are few and harmless ; on the S. creek of the Nyanza, however, they rise in clouds. The common *culex* of this portion of E. Africa is rather a large variety, of a brownish or dun colour ; the bite has little venom compared with those of the Mozambique, or even of W. India.

showing, like its eastern neighbour, signs of long submergence. The scenery is a curious contrast in this strange African Nature, which is ever in extremes, and where extremes ever meet;—where grace and beauty are seldom without the present contrast of a hideous grotesqueness. The Expedition crossed this plain early on the morning of the 23rd of August, 1857. Above lay a sea of purest azure, flaked by fleecy opal-tinted vapours high in the empyrean and catching the glances of an unrisen sun. Long lines, one bluer than the other, broken by castled crags, girt the horizon; the nearer heights were of a purplish brown, and snowy mists hung like glaciers about their folds. The most graceful of animals—the antelope and the zebra—browsed in the distance: now they stood to gaze upon the long line of men, then, after leisurely pacing, with retrospective glances, in an opposite direction, they halted motionless for a moment, facing about once more to satisfy their curiosity, and lastly, terrified by their own fancy, they bounded in ricochets over the plain. The doves* cooed loudly in the clumps of evergreen, in which some parent tree stretched its giant arms over a “fairy ring” of cool and dew-fed verdure. Troops of guinea-fowl clustered like blue-bells upon the boughs, mingling their wild cries of joy with the loud chatter of the peewit. Yet, that deformity might not be wanting, the end of this picture was a tangled mass of tall fetid reeds and rank jungle, with its rotting dead wood encroaching upon the hole-pierced goat-track that zig-zagged to the Myombo river. This perennial stream, rising in an elevation opposite the hills of Duthumi, and flowing with a s.e. (?) course, is about 50 feet broad at the ford; its swift brown waters roll under a canopy of the trees whose name it bears. The kraal is found upon a little elevation on the left bank.

The seventh march concludes the transit of the mountain plain in 4 h. 30 m. It winds over a flat thickly covered with tall and spiny grasses, and after crossing a thick bush, in which, owing to the network of paths, it is not difficult to lose the way, it abuts upon shambas or plantations of *holcus* and maize; fields of tobacco, and scattered growths of papaw and castor. Here, until August, 1857, stood Mbumi, a flourishing village of Wasagara, so called from its sultan. It was found, however, plundered, and half burnt by the “filibusters” of Whinde, headed by the terrible Kisabengo. Cots and nets, drums, mortars, and articles of humble furniture were scattered upon the ground, and the fields had been stripped and restripped by every passing caravan. A few of the wretched fugitives were seen lurking in the jungle, no man daring to revisit

* These birds, called, probably from their cry, “Huwwa,” resemble our turtle doves. They make sufficient noise in the jungles to satisfy a European, but the Arabs complain that they do not coo with that spasmodic energy which Orientals, who mix a manner of mystery with the subject, admire.

the wreck of his property. Here again the Demon of Slavery will reign over the solitude of his own creation. Can it be that by some explicable law, where Nature has done her best for the happiness of man, man, doomed to misery, must become his own tormentor?

A few miles of marescent vegetation and dripping grass, tall, stiff, and thick-stalked, line the path that winds from Mbuni along the line of the Mukondokwa River, where the traveller, rising and falling over the slippery mire, hurries from the horseflies* and the huge black pismires. After about an hour's march the stream must be forded. According to the guides, it is the upper course of the Kingani river, with which it anastomoses in Uzaramo (?). It cuts its way through the chain, to which it gives a name, by a transversal valley perpendicular to the lay, and so conveniently disposed that the mountains seem to be made for their drain, rather than the drain for its mountains. The approach, a mere tunnel in the close jungle, causes delay to large caravans, and the

* The Tabanidae are troublesome in the jungle-patches throughout the country, especially during the dry, hot weather. There is a large brown dipter whose long and sharp proboscis draws blood and leaves a lasting trace. A specimen has been deposited in the British Museum. This, or some other fly, buries its eggs in the human skin, causing a small red painful boil, from which, after a few days, issues the "Funza," or larva, a small white worm. Strangers as well as natives, especially in Unyamwezi, suffer from this annoyance. The jungles also contain a large blue fly with a scarlet head. The favourite haunts of all these insects are the patches of uncultivated grounds which separate the settlements, and the bite is more painful before the rains than at other seasons. Yet the plague of flies is far more tolerable in these lands than in the Somali and the dry pastoral countries to the north.

N.B.—Since the above was in print, the following note was kindly forwarded to the author by Mr. Adam White, in whose hands the little collection of insects has been placed:—

DEAR SIR,

British Museum, November 21, 1859.

The fly you met with in the country between the mountains and Tanganyika, in S. lat. 5° , is certainly the Tssetsé, or *Glossina morsitans*, met with by Vardon and Livingstone in another part of S. Africa. The wings are a trifle darker than in the specimen we had before, the result, no doubt, of yours having been preserved in spirits of wine.

Your other insects are a species of *Sternocera*, allied to *S. lanifica*, &c., but without the pilose depressions on the thorax and elytra; also a species of the genus *Trox*, with polished tubercles on the elytra arranged in lines. Of Orthoptera there are specimens of *Acheta*, *Hetrodes*, and *Conocephalus*, most probably undescribed. Two species of *Forficula*. Of Hymenopterous insects you have four species, the names of which, as given me by Mr. Smith, are *Mutilla Sycorax*, *Peloprus Echlonii*, *Apis scutellata*; and a species of ant of the genus *Ponera*, allied to *P. pestilentia*.

Of Neuroptera there is the larva of a species of *Myrmeleo*, or Ant-Lion. Of Aptera, two specimens of a Tick of the genus *Trombicula*, allied to *T. tinctorium*; and a fine species of *Julus*, one of the Millepedes.

All the insects are of characteristic African genera; some of the species are found in Natal, while the Bee even extends to West Africa.

CAPTAIN BURTON, 14, St. James's Square.

porters, stung and pricked, become so impatient that their loads often suffer. The brown swift stream is here unusually broadened to about a hundred yards by a branch islet above the ford; the right bank falls into water breast-deep, with a network of tough roots; and the left is a quagmire of slushy mud, encumbered with thick grass, canes, and fallen trees. The depth in August, 1857, was about three feet, but it is liable to floods and freshets, often causing great loss of time to travellers. Ascending the miry run on the left bank, the route resumes the northern side of the stream, winding along the flanks and bases of hills, sometimes ascending the spurs of stony and jungly eminences, where the paths are rough and precipitous, at other times descending into the stagnant lagoons, the reedy and rushy swamps, and the muddy bogs which margin the stream. After a total march of 6 hours the kraal appears; it lies upon the sloping ground at the foot of the northern walls encircling the grassy river-basin, through which flows the Mukondokwa in a turbid brown stream, here narrowed to about 40 feet. The district of "Kadetamare" was formerly a plentiful provisioning station, where even cattle were procurable—a rare circumstance in the smaller settlements of Usagara. Now the people, hunted and harried like wild beasts, have built their cottages upon the highest ridges. At the sight of a single Murungwana or stranger approaching the settlement, the war-cry or the drum re-echoes amongst the hills, and even the women hurry to arms. Caravans therefore hasten through the land half-starved and suffering from colds and chills, the result not of low temperature, but of humidity and inordinate evaporation.

The ninth march ascends the fluviatile valley of the Mukondokwa, girt apparently on all sides by high picturesque peaks, with homesteads smoking and cattle grazing upon the level steps. After about 1 h. 30 m. of progress through plantations and tobacco plots, divided by patches of grass and bush, and cut by deep nullahs, the path descends through a narrow lane of reedy vegetation, at the end of which the stream is forded, and receiving less drainage than in the lower bed, the passage is easier. The road then skirts the right bank of the river through cultivation, grass, and trees, up a gradually broadening valley peculiarly rich in field-rats.* Crossing sundry swamps and nullahs, neats'-tongues, and

* The Arabs describe a kind of jerboa (the *Dipus Cafer*, or Cape jerboa?), with reddish back, white belly, and long hinder limbs, which abounds in the fields, and is considered delicate meat by the people. The Indian musk-rat is common in Unyamwezi and Ujiji. The bandicoot was not seen. There is a striped rat called by the Arabs *el Mushakhkhat*; dark, with yellow marks, which show distinctly in the sun. The huts and shady places under the trees are full of brown rats, which resemble the Persian animal now so common throughout Europe. They do great damage to provisions, cloth, and matting, and sometimes invade Khatu and other provinces in armies which devour the harvests; and so

hill spurs, where the ascents and the descents are equally rough, jungly, and precipitous, it presently falls into a deep reach, where pools of water, breast deep and hedged in by impassable jungle, and by long runs of slushy mire festering in a furious sun, severely try the strongest Pagazi. Thence the road winds under the high hills to the south, whilst on the opposite or left bank of the river the broadening valley displays a growth of palms and large trees. After about 8 hours of painful toil a kraal is found in the district of Muinyi. Here again the Wasagara refuse to sell provisions, and consider the visit of a "Murungwáná" * an offence punishable with death. The porters who have recklessly wasted the provisions brought from Muhama must support life by edible roots and herbs.†

From Muinyi to the next station, Nidabi, is a march of 4 h. 50 m. The path is painful, winding along the shoulders of stony and bushy hills, with rough re-entering angles, and sometimes dipping down into the valley of the Mukondokwa, which, hard on the right, spreads out into swamps nearly two miles broad, temporary as far as they depend upon the rainy floods, and permanent where their low level admits of free filtration. On the steep eminences to the right of the path rise, tall and thick, the thorn growths, the aloetic plants and cactaceæ of desert Somaliland; the other side is a miniature of the marine lagoons, the creeks, and the bayous of green Zanzibar. After 3 hours' marching the labour comes to a crisis, where the path, breaking off at a right angle from the river, winds up an insecure ladder of loose earth and rolling stones. At this place more than one member of a caravan will lose his footing and disappear through the thorny bushes of the steep slope on the off-side. Then, leaving the stream to the north, the path falls into a gravelly fiumara, about 100 yards broad, which occupies the centre of a widening table-land.‡ The deep sand is dented with cattle-

great is their desire for meat, that they compel, by their bites, the cottagers to sleep on elevated platforms. At times the whole host of rats will leave the hut simultaneously, when the people say that they go to drink. They are also believed to show their contempt for the human race by an offensive act of which monkeys have been accused. Some of these animals have a very dark skin, caused by soot and smoke; but it is not probable that the black rat could exist amongst so many enemies. The E. Africans call rats and mice generically P'hányá.

* Murungwáná (Mulungwáná) means a free man, as opposed to Mtúmá, a slave. It is, however, applied especially to free negroids from Zanzibar island or coast, and is thus appropriated even by slaves and clients when travelling in the interior. It is a common address to a man when his name is not known.

† All wild greens and vegetables are called by the people Mboga, which must not be confounded with Boga, a pumpkin or a gourd. A collection of the different Mbogas, which are numerous and peculiar, was attempted, but the plants perished with the rest of the herbarium.

‡ Before arriving at this point the road divides. The northern branch, called the Suti route, arrives after six long stages, where provisions are not always procurable, at the dominions of Sultan Magomba in Central Ugogo.

prints, trees clothe the banks, beyond which lie fields of bajri (*panicum*), the staple cereal, which here supplants the normal holcus, maize-beans, njugu (*Voiandzeia subterranea*), and tobacco. As the fiumara is ascended it rapidly narrows, and is encumbered with heaps of boulders, from which springs a runnel of the sweetest water. Many villages cluster on the amphitheatre of hills that overlook this dry and healthy little plateau. Having less to fear from the kidnappers of the coast, the villagers sell their surplus stores. The price of provisions, however, is ruinous; here six shukkah, elsewhere the value of a fat bullock, must be paid for a lean goat or a mangy sheep.

The eleventh march leads, after 5 h. 30 m., from Nidabi to Rumuma. The line crosses a high and stony hill-shoulder, and stretches over gradually rising and rolling ground to a dense bushy forest of cactaceæ and thorns, based upon a surface of brickdust-red; ensues another plateau of wavy surface, producing dwarfed and stunted calabashes, and grain in fields carefully and laboriously ridged with the hoe. Flocks and herds also appear in all directions. The ground is now rust-coloured, then dazzlingly white, with a detritus of granite; mica glitters like filings of silver in the sun, and the fine silky grass waves bleached clean of colour by potent heat. This plateau ends with a steep descent through rock and boulder into the low basin of the Rumuma river. It is a southern affluent or a bifurcation of the Mukondokwa, the drainage of the hills to the south-west of Rumuma; whereas the main stream arises, it is said, in the hills of the Wahumba or Wamasai, to the north-west of the station. The "Rumuma" is a mere mountain torrent, flowing with a shallow swirl through boulders and sand, under stiff banks of red earth, densely grown with reeds and bush. Irrigation by raised watercourses renders the district a place of comparative plenty when the plundering Wahumba do not interfere. There is a sultan who shows a fellow-feeling for slaver-travellers, and his subjects troop down from their hill-eryries with neat baskets of grain, ground-nuts, beans, and pulse on their heads, or dragging along bullocks, lank sheep, and small but beautifully formed goats. Rumuma is capable of supporting a large caravan for a fortnight, but merchants do not halt there willingly. The kraal is badly situated on a ledge between the humid hills and the tangled bush on the river's bank. The mornings and evenings are chilled with thick vapours and spitting clouds, and at nights the thermometer, under the influence of the dewy gusts, sinks to 48° Fahr.—a killing temperature in these latitudes to half-naked and houseless men.

Márengá Mk'háli, the "brackish water," is the twelfth march, distant 3 h. 30 m. The track fords the little Rumuma torrent at the spot where it receives the thin supplies of the Marenga

Mkhali; it then crosses a stony hill, and falls into the bed of the "brackish water," which is here encumbered with boulders, and it ascends the line as far as the junction of a smaller influent from the south-east. Beyond this point it traverses a seam of spiny bush, dotted with calabashes and thorns, the castor and the wild egg-plant; and, gradually rising, it enters upon scattered cultivations of holcus and bajri, pulse and beans. Here for the first time beehives,* long cylinders of hollowed log, are seen hanging beneath the foliated trees. Cucumbers, water-melons,† and pumpkins,‡ grow apparently without cultivation. On the eastern hill above the Marenga Mkhali travellers often halt for provisions; others ford the streamlet, and, ascending a rough jungly hill, find upon its windy summit a few scattered calabashes, perhaps the remnants of a kraal, and certainly a destructive host of white ants.§ Here these animals begin to show in force; their cellular hills, however, are rarely more than 3 feet high.

* These hives are called by the people Mazinga, or cannons, from their shape. The log is split into two pieces, hollowed out, and then rejoined by cords or thongs, it is closed at both ends with puddle, and provided with a central oval entrance.

† The water-melon, called by the Arabs Johh, and by Wasawahili Tikiti, abounds in Ugogo and Unyamwezi, where heaps are ripened upon the flat rooftops. This fruit is sown before the rainy season, like the pumpkin and the cucumber. It is gathered after six months. In Unyamwezi the Tikiti is almost eatable, but in Ugogo and elsewhere it is of the worst description; large, hard, fleshy, tasteless, full of seeds, and insipid as the produce of Kafirland. Yet it is a favourite food with the people. The bitter water-melon of S. Africa was not observed.

‡ The pumpkin is termed by the Arabs "Juinsá" (?), and in the Kisawahili "Boga." Its red meat simply boiled is nauseously sweet, yet is held wholesome in these latitudes. The people toast the seeds, pound and eat them with "Mboga" or wild herbs.

§ The Chhungu Mchwa, or white ant, abounds throughout the sweet red clay soils and cool wet places, where it acts as scavenger; indeed, without it the country would be rendered impassable. It avoids heat, sand, and stone. In some districts, especially in Usagara, Ugogo, and Ujiji, it is most destructive. A mud bench will be pierced and drilled during a single night by an army of these insects, and heaps of reeds placed under bedding will in a few hours be converted into a mass of mud. The colder and damper countries, where the soil is not salt, are studded with ant-hills of ruddy clay. These, however, are not large enough to form, as in Somaliland, an important feature in the landscape. To satisfy man's crave for animal food, the largest and fattest kind of white ant, after being boiled in water with a little salt, is eaten as a relish with the insipid ugali or porridge. The animal appears a mass of live water; even in the driest places it finds no difficulty in making a clay-paste for its galleries. This has been explained by a conjecture that it combines by vital force the atmospheric oxygen with the hydrogen of its food. When arrived at the adult state these insects rise upon wings from holes in the ground, like thin curls of smoke, generally about eventide. After a flight of a few yards, the wings, which apparently serve to disperse them into colonies, drop off.

In E. Africa there is also a semi-transparent brown ant resembling the termite in form, but differing in habits, and even exceeding it in destructiveness. It does not, like the white variety, run mud-galleries, like hollow tree twigs, up to the point of attack. Each individual works for itself, tears the prey with its strong mandibles, and carries it away to its hole.

The route through the lateral plain which separates the Mukondokwa, or second, from Rubeho, or third, range of Usagara, is generally divided into two stages of five and four hours. At Marenga Mkhali, which is under the lee of those eastern ranges upon which the vapoury north-east and south-east trades directly impinge, the exceeding fertility of the soil declines, the eye no longer falls as before upon a sheet of monotonous green, and the smell is not offended by the corpse-like exhalations of putrescent herbage. The early dew diminishes, the morning cloud disappears from the hill-tops, and the stratus is not often seen in the valleys; moreover, rain seldom falls heavily, except during its single appointed season. The climate is said to be wholesome, and this middle elevation (2500 feet) raises the land high above the fatal fever level without attaining the altitudes where dysentery and pleurisy affect the inhabitants. For many miles beyond Marenga Mkhali, however, provisions and even water cannot be procured in the dry season. Caravans therefore have resort to what is technically called the "Tirikeza,"*—an afternoon march. The porters eat and drink, fill their gourds, and pack their loads about midday; they set out usually before 2 p.m., and they march steadily till sunset, or, if the moon be near the full, till they feel tired.

This "Tirikeza" commences with crossing the nullah which falls into the Marenga Mkhali on the last march. The road then leads up several steep and jungly ridges to the summit of a pass or col. Here from a step of red soil appears an extensive basin bounded by distant blue hills; those to the north being pointed out as the haunts of the dreaded Wahumba. Winding along the southern sides of the basin, the path spans a barren of acacias, thorns, and prickly shrubs, and crosses a deep watercourse trending northwards, in whose sole of coarse sandstone are cups and holes sometimes even in the dry season full of a rusty ochreish fluid. Thence the path, gradually descending, plunges into a coarse scrub varied with small savannahs, and broken, like the rest of the road, by deep narrow nullahs, which carry off the waters of the southern hills to the lowlands on the north. A small and comfortless khambi is found or built in the thickest of the bush, a precaution against the treachery of the Wasagara and the Wahumba; and the whine of the hyaena keeps caravans that travel with cattle on the alert till dawn.

The fourteenth march, which occupies 4 h., places the traveller

* In the Kisawahili, Ku Tirikeza, or Ku Tilikeza, in Kinyamwezi, Ku Witekeza, is the infinitive of a neuter verb, meaning "to march after noon." By the Arabs it is generally converted into a substantive, and used to signify "an afternoon march." A similar instance is the expression Ku hongá, to pay tribute, passage-money, or blackmail, of which the Arabs make a noun, Kuhonga, or Honga, "blackmail."

in the district of Inenge. After an hour's toil through the jungle to its western edge, a somewhat rapid descent displays a second basin resembling in its features that last traversed. It is one of the many views, picturesque from afar, when, "catching the reflex of heaven," they lose by indistinctness the harshness of defined outlines and the deformity of individual features. Extensive cultivation, flocks, and herds are descried in the lower levels, which are divided by a network of nullahs, and upon the steps in the encircling hills, the Tembe, the square or oblong African village, appears for the first time. Early September is in this region the depth of winter; under the burning yellow sky the grass is white as the soil, the fields—stubbles stiff as harrows—are stained only by the shadows of passing clouds; the trees, except upon the nullah banks, are bare; the animals are walking skeletons; and nothing seems to flourish but flies, white ants, and caltrops.* Intense heat and want of water have dried the land, and man seems to aid the work of nature by firing the long grass on the hill sides. After crossing deep water-cuts, trending N.E. and N.N.E., and descending a sharp incline and a rough ladder of rock, the kraal is found at the bottom of a khad † or ravine, which carries off the surplus water of the third or "Rubeho" range. The situation, chosen on account of the sweet springs in the rocky bed which cover the soil, as far as they extend, with a nutritious and succulent grass, is hot, dirty, and confined. It is a climate of extremes; during the day a furnace, and at night chilled by the cold winds from the hill-tops. The villagers of the settlements that overlook the ravine bring for sale, besides grain and animals, fresh milk and curds, honey and clarified butter—luxuries here procured for the first time. Provisions, however, seldom appear after the third day.

The basin of Inenge lies at the foot of the Rubeho, or Lubeho, the "Windy Pass," in the third and westernmost range of Usagara; the ascent is wholly without art, and in places it is severe toil for laden men. The distance to the summit does not exceed 9 miles, yet it is rarely accomplished under 9 or 10 h. The path, winding up the eastern face, rounds, in two places, perpendiculars of rock, crosses a jungly step, and finally faces, without suspicion of a zigzag, a long steep, rendered more fatiguing than all the rest by its loose soil and rolling stones, upon which the Pagazis appear at a distance like baboons scaling a precipice. From the summit, a step or ledge

* This thorn, a serious obstacle to the progress of a naked-footed caravan, is found in dry places throughout E. Africa. Its Indian name is Gokhar, or Gokhru, the Tribulus. The grapple-plant (*Uncaria procumbens*), described by Dr. Livingstone (chap. xviii.), was seen in the drier regions.

† The "khad" is the deep rocky drain in hilly countries, thus differing from the popular idea of a "ravine," and from the nullah, which is a formation in more level lands.

covered with aromatic shrubs and bright flowers, the gift of mountain dew, the basin of Inenge lies disclosed beyond a foreground which falls almost from beneath the gazer's feet in a perspective of huge rocks emerging from desert herbage upon the ridges, whilst, on all sides but that which opens upon the plain, forest patches and hanging woods, black with shady growth, gather in the steep folds of the hills. Caravans are frequently stopped in these spots; the "sayhah" or war-cry, once raised, passes from village to village, and after a few minutes dark lines of men, armed to the teeth, are seen streaming, like black ants, in Indian file, down the slopes to their rendezvous. Beyond the summit of the hill there is an easy step of rolling ground with rivulets and green grass and frequent villages, on the flanks of the heights towering behind them. Some caravans halt at this place, called the "Great Rubeho" from the severity of the ascent; generally, however, they pass on to the summit. It is reached, after a march of 2 h., by breasting a second hill, as steep, but not so lengthy, as that below. Hence the road winds along the flank of an eminence which leads to the Little Rubeho, the summit of the third range, raised 5700 feet above the level of the sea.

The Little Rubeho is the main water-parting of this line: at Inenge the trend is to the south-east, beyond this point to the south-west; eventually, however, both find their way to the Indian Ocean—the former through the Mukondokwa and the Kingani, the latter through the Rwaha and the Rufiji Rivers. Until the last year the summit was studded with large fenced villages, containing a very villainous race: the land is now a wilderness. Caravans at Rubeho suffer severely from the violent Tramontanas that make the chine their meeting-place: the cold mists and dews of night, the fogs and the showers of morning, appear perennial upon the highest peaks. Water also is distant about a mile down the western slope of a red hill; at its bottom a spring welling up from under highly tilted strata of sandstone and detached blocks, with trees between, and forming a muddy and iron-stained rivulet, clothed with rush and coarse moss, winds lazily down the gaps between the heights.

From the "Little Rubeho" begins the counterslope or landward descent of the Usagara Mountains. The base of the highlands westward is about 400 feet lower than the eastern lateral plains from which they spring—Inenge being 3140, and Ugogi 2750 above sea level. The descent, which occupies nearly 14 h., is rarely effected in less than two days, and thus the seventeenth march sees the last of the mountains between the coast and Unyamwezi.

A narrow footpath winds from the summit along the hill-flanks over red earth from which grow clumps of cactus and feathered mimosas. After a few hundred yards it falls into a green gap, the course of

a sluggish rivulet, irrigating scanty fields of grain, gourds,* and water-melons, the property of distant villagers. In this solitary spot there is a kraal for lazy travellers, but few avail themselves of it. Emerging from the grassy hollow, the path skirts the side of a well-wooded hill, beyond which lies a small savannah, a dead level, overgrown with stunted straw, and walled in by a rampart of bushy forest. Here again occurs the curious contrast of holts and clumps of massive trees foliaged more gloomily than church-yard yews, with delicate pink flowers rising from the tawny sun-burnt surface, and obstructing the fiery glare from braky rings of cool dewy shrubbery, sharply defined as if by the forester's hand.

This savannah extends to the edge of a step which, deep falling, suddenly discloses to the eye, below and far beyond the shaggy mountains and the dark ravines of the foreground, the level plateau of Ugogo and its eastern deserts. This spectacle impressionizes even the African traveller. Up to the curved rim of the western horizon lie, gilt by the glowing sun, plains, rippled like a yellow sea by the wavy reek of the dancing air, broken towards the north by a few detached cones that rise in brown-blue islands, and streaked with lines where bush and scrub, supplanting the scorched grass, define the watercourses trending in mazy network southwards to the Rwaha River. There is nothing of effeminate or luxuriant beauty, nothing of the flush and fulness characterising tropical nature, none of the gleams and glooms of the sombre glens, and the brilliant grass-plots which diversify the faces of the mountains, in this, the first aspect of Ugogo. It appears as it is—the rough nurse of rugged men; and perhaps the anticipation of dangers and difficulties, ever present to the minds of those who are preparing to endure the waywardness of its children, contributes not a little to the fascination of the scene. Having lingered a few moments upon the crest of the step, the porters scramble down its irregular incline of red glaring clay and white glaring chalk, plentifully besprinkled with dark olive silex in its cherty crust. Below the descent is a level space upon a long ridge, where some small villages of Wasagara have surrounded themselves with holecus, bajri, and maize. A little beyond this spot, called the third Rubeho, lies an uncomfortable kraal on uneven ground, sinking into a deep ravine. Water is distant, provisions are scarce and dear, and the climate is terrible to men who wear nothing but a loose goatskin little larger than an English baby's bib. The mornings are darkened by streams of mist, which roll down the hill-gaps like torrents before the frigid blasts. During the hours of heat the vault above seems an "ampler

* This is an edible gourd called mungunya, much relished by the people when young. Some distinguish between it and the buyn, or gourd (*Cucurbita lagenaria*), used as bottles.

æther," apparently raised by its exceeding transparency higher than it is wont to be ; the sun blisters, and at night howling gales, attracted by the heat of the western plains, sweep whirling down the glens, slopes, and combes.

The seventh and last march, which occupies nine hours, concludes the descent of the Usagara mountains. When water is scarce, a "tirikeza" is the remedy ; and in this case provisions for two days must be collected at Rubebo. The line winds to the north-west, down the stony and bushy crest of a ridge, with a deep woody glen on the right hand : presently, after alternations of steep and step, and platforms patched with odorous bush, it falls into the upper channel of the Mandama or the Dungomaro, the Devil's Gap.* This great surface-drain of the western slopes is here a line of stone and boulders reposing upon sand, and closely canopied by the branches of thorny trees. Caravans usually seek out a softer spot for bivouacking : a long trudge in the dark over such ground would lame half their number. After some distance the road turns away from the fiumara, where boulders obstruct progress ; and, descending steep pitches with gentler rises, it again falls into the Dungomaro, which has become a green and shrubby watercourse ; where perennial rills, exuding from the earth-walls, trickle down the sole. As the plain is neared, the difficulties increase, and the scenery improves. A deep crevasse of gravel, strewed with a rugged layer of stones, is apparently shut in by tall peaks, side-lined with thin layers of brown humus crowned with dwarf cactus and with a terrace-work of stunted trees. As the traveller advances, huge boulders, sunburnt, and stained with the courses of rain torrents, rise in places perpendicularly as walls of the fiumara, and at others, where water lies, mud and thick clumps of grass and reed force the path to run along the stony ledges at the bases of the sides. In the drier spots are polished slides of grey and pink granites, streaked with quartz and pudding'd with greenstone and hornblende : there are broad fissures and steep drops, and "pot-holes," cups, and basins, eroded by the friction of the gravelly waters, regularly as if turned with a lathe. Gradually the angle of inclination becomes more obtuse, the bed widens, the rock-walls give way to steep earth-banks covered with gum-trees ; wells or pits appear in the sand, and the Dungomaro diverges southwards into the plain. The kraal is upon the right margin of the mouth of the great gully, a pretty spot in a barren scene, grassy, and grown with tall sycamores and green mimosas, spreading out their feathery heads like parachutes, and shedding upon the ground a filmy shade that flutters and flickers

* Dungomaro, in Kisawahili, is the proper name of an evil spirit, not in the European, but in the African sense,—some unblessed ghost who has made himself notoriously unpopular to the general.

in the draughty breeze. This level ground is Ugogi, the frontier district, a long dhun, backed by the Usagara main range, flanked by subranges of low hill, and open only towards the south.

Ugogi, the halfway district between the coast and Unyanyembe, is usually made by the up-caravans after a journey of two months. It lies 2750 feet above sea-level. The climate, after the damp cold of Usagara, pleases by its elasticity and by its dry healthy warmth; the nights are however cool, and the rays of the sun are tempered by gusts and raffles, which, regular as land and sea breezes, sweep down the sinuosities of the Dungomaro. The people are a mixed race: the Wasagara claim the land, but they have admitted as settlers many Wahehe and Wagogo, the latter for the most part fugitive criminals. The neighbouring hills are rich in cattle, and the plains in grain. Caravans must here lay in supplies for a march of four days across the western wilderness, and they are not always procurable, owing to the incursions of the Warori. The inhabitants sometimes offer for sale ghee and honey, milk and eggs; but—it is only the civilised rogue who can improve by adulteration—for the most part the ghee is sweet above and bitter below, the honey is in the red stage of fermentation, the milk falls off the finger like water, and of the eggs there are few without the rude beginnings of a chicken. The country still contains game, guinea-fowls in abundance, the ocelot,* the hyrax,† and a beautiful specimen of the silver jackal:‡ elephants and giraffes § are frequently killed. But the sport has suffered from the passage of armed caravans and the carnivorous propensities of the people, who, all huntsmen, leave the beasts no chance against their nets and their arrows, their pitfalls and their packs of yelping curs.

The route above described is the northern or Mukondokwa

* A variety of the ocelot (*F. nigripes?*), considerably larger than the domestic cat, with lateral bands of a brownish black on a pale ground tint, and very regular across the thick, bushy tail, is here called p'haka ya muytu, or jungle cat, and the skin is a favourite head decoration. The lynx does not appear to exist in this part of E. Africa.

† The daman or coney (an African variety of hyrax), similar to the animal brought from the Somali country, is found at Ugogi, and in the drier regions of E. Africa.

‡ A beautiful variety of the "silver jackal" was seen at Ugogo; unfortunately no specimen could be procured. Amongst other writers Barrow ('Travels in Southern Africa') describes this animal as a hitherto unknown "species of fox." The mbweha, another species, is common in the country; its whining and snapping bark is heard in almost every jungle. Judging from the absence of the peculiar cry of the common Indian jackal, that animal does not exist in E. Africa.

§ This, the tallest of animals, is called by the Arabs of Zanzibar Jamel el wahshi, or the wild camel, a translation from the Kisawahili *ngamia ya muytu*; in the interior it is called "tigá," or "twigá." Giraffes are numerous in the uncultivated parts of the country; their tracks are frequently seen, but they wander far, and are rarely found except by accident. Their hides are converted into shields and saddle-bags, their long tufty tails into chauri or fly-flappers, and the flesh is a favourite food.

passage of the mountains. The Kiringawana, which requires a briefer description, is the southern line; and the two are separated by a maximum interval of 43 miles. The Kiringawana is the more ancient; it contains some settlements, like Maroro and Kisanga, not unknown by report to European geographers. It is preferred by down-caravans, who have no store of cloth to be demanded by the rapacious chiefs: the up-country travellers, who have asses, must frequent the Mukondokwa, on account of the severity of the passes on the Kiringawana road.

The Kiringawana numbers nineteen short stages, which may be accomplished without hardship in twelve days, at the rate of about five hours per diem. Provisions are procurable in almost every part, except when the Warori are "out;" and water is plentiful, if not good. Travel is rendered pleasant by long stretches of forest land without bush or fetid grass. The principal annoyances are the thievish propensities of the natives and the extortionate demands of the chief. A minor plague is that of the mosquitoes, that haunt the rushy banks of the hill-rivulets, some of which are crossed nine or ten times in the same day: moreover, the steep and slippery ascents and descents of black earth and mud, or rough blocks of stone, make the porters unwilling to work.

From Central Zungomero a march of sixteen hours, usually divided into four days, conducts the caravan to Uziraha, the westernmost province of Khutu, at the foot of the Usagara mountains. The districts crossed are Kiringe, Marundu, and Eastern Mbwiga: from the first there is a branch road to the Rwaha River. The people admit strangers into their villages, where wretched straw hovels, contrasted with the lavishness of nature, look like birds'-nests torn from the trees. At the sight of every passing caravan the goatherd hurries off his charge, the peasant prepares to rush into the grass, the women and children slink and hide within the hut, and no one leaves the house without a bow and a sheaf of arrows, whose pitchy-coloured barb-necks denote a fresh layer of poison. Animals are scarce amidst this portentous growth of herbage: not a head of black cattle is seen, flocks and poultry are rare, and even the beasts of the field seem to flee the land.

Beyond Mbwiga lies the Mabruki Pass, the first and the most severe on the Kiringawana road. The track, following up the course of a streamlet flowing southwards, spans some rough ground at the hill base. It then winds up the first step, a short but sharp rise of earth, corded with the tree-roots which have been bared by heavy rain. After crossing deep and rugged nullahs, it reaches the second step, and ascends the chines and edges of well-forested hills. These heights, which are bordered on both sides by precipitous slopes of earth overgrown with bamboo clumps, command an exten-

sive view of subrange and hill-spur, of dhun and champaign, sprinkled with villages and dwarf cones, and watered by little streams that glisten like lines of quicksilver in the blue-brown of the distant landscape. The long ridge-line leads by a sharp ascent to the crest of a rough hill, whence a gentler counterslope bends down to a kraal called Mwimbi, in the basin of Kikoboga. This march is of about three hours. Nothing can be worse for encamping than Mwimbi. It lies on the bank of a black and muddy stream at the head of a narrow gap, where heat is concentrated by the funnel-shaped hill-sides, and where the dank ground, strewed with rotten grass and leaves, harbours hosts of cockroaches,* beetles,† and mosquitoes. The supplies are distant, and the water is vile. In these regions, however, the Wasagara cultivators, fearing plunder, should a caravan attempt to encamp near their crops, muster in force; the travellers, therefore, must not unpack, except at the normal kraals on either side of the basin.

Passing through the southern extremity of the Makata plain, the route spans a hideous low level of black vegetable earth, peaty in appearance, with long puddles of dark, scummy, and stagnant rain-water, mere horsepools, with the additional drawbacks of miasma and mosquitoes. It then emerges into a clean forest of rainbow hues, and from Kikoboga reaches, in 7 h. 30 m., the Ruhembi rivulet, which seems to be the "Rohambi people" of Mr. Cooley's "Itinerary."‡ The inhabitants are Wasagara, and they supply travellers with manioc, grain, and bitter egg-plants of a scarlet colour, resembling tomatoes.§ Cultivation flourishes upon the hill-sides and in the swampy ground about the sole of the basin, which is bisected by a muddy and apparently stagnant stream 10 feet broad.

From Ruhembe a march of 4 h. 30 m. leads to the basin of Kisanga, the province of the great chief Kiringawana. The path lies through an open forest, where sweet air and soft filmy shade form—whilst the sun is low and the breath of the morning is pure and cool—most enjoyable travelling. After a few miles on a good path unencumbered by reed and thorn, the line falls into a broad

* The blattae in E. Africa are numerous and voracious; they are found in the country, especially about mixens and decayed vegetation, as well as in the huts.

† Scarabaei, of various kinds, abound in E. Africa; they are not, however, venerated by the people. A large black species is eaten by some tribes. In Kisawahili it is called "kimara-mwaka," or "ender with the year," because it is supposed to die off during the hot season.

‡ Geography of N'yassi, p. 22.

§ The egg-plant (*Solanum Melangena*), called by the Arabs of Zanzibar *bádinján*, and by the Wasawahili *beringán*, both corruptions of the Indian "bengan," is of many varieties. Two are red, one larger the other smaller than tomatoes. A third is white and purple, and of a long shape, like the bengan of W. India. A fourth is large and whitish, like the dilpasand of Sindh. This vegetable abounds in Usagara, Unyanyembe, Ujiji, and upon the borders of the Tanganyika Lake; little cultivated, it is generally bitter and full of seeds, and those growing wild are uneatable.

"wady," declining from east to west, with thick lines of tree and bush down the centre, and everywhere else an expanse of dark, unbroken green, like a plate of spinach. Thence falling into the track of the Yovu, a narrow stream, the drainage of Kisanga to the Rwaha River, the road enters Kisanga.

Kisanga is, like most of the basins upon this line, an enlarged "punchbowl," almost surrounded by a mass of green hill, cone rising upon cone, with tufts of trees and long lines of small haycock-huts dotted along the acclivities and ridge-lines. On the north-west the chain is infrazed by the Rufita, a rocky hill-torrent, which forms in the rainy season a series of rapids and cascades. This, uniting with other streams, swells the Yovu, which, bisecting the basins from north to south, passes by the south-east into the Rwaha. This Yovu, which must be forded, is in the dry season about four feet deep; it flows down a muddy bed laced with roots, and its banks, whence a putrid smell exhales, are thick lines of sedgy grass, which shelter myriads of mosquitoes. The sole of the basin is rough and uneven: a rich cultivation extends from the hill-slopes to the stream; and fine trees, amongst which are the mparamusi and the sycamore, relieve the uniformity of the well-ridged fields. There are a few villages upon the sole; the most considerable is inhabited by the Sultan Kiringawana.

The father, or, according to others, the grandfather of the present chief, a Mnyamwezi of the ancient Wakalaganza tribe, first emigrated from his home in Usagozi, and, being a mighty elephant-hunter and a powerful wizard, he persuaded by arts and arms the Wasagara, who allowed him to settle amongst them, to obey him. The actual Kiringawana, having spent his heir-apparent days at Zanzibar, returned to Kisanga on the death of his sire, and reigned in his stead. His long residence among the Arabs has so civilized him that he furnishes his several homes comfortably; he receives his tributary-visitors with ceremony, affects amenity of manner, clothes his short, stout, and sooty person in rainbow-coloured raiment, carries a Persian sword, and is a cunning diplomatist in the art of choosing cloth. He took from the Expedition, though passing through his acres on the return march, when presents are poor, three expensive coloured cloths and eight shukkah of domestics and kaniki, wondering the while that the wealthy Wazungu had forgotten to reserve for him something more worthy of his acceptance. Yet he was by no means uncourteous. He sent Msimbiri, his eldest son, to represent him,—his dignity forbidding him to wade the Yovu, on whose other side the Expedition had prudently encamped,—and he gave a fat bullock as a return present. Moreover, he restrained the cupidity of an elder, who, when his hut had been burned down by the fatal folly of the slaves that accompanied the Expedition, named as indemnity a sum

which would have purchased the whole household. The noble descent of this chief gives him power over the guides of the Wanyamwezi caravans; in consequence of an agreement with the diwans of the Mrima, he has lately closed the direct road to Kilwa, and he commands a little army of touters. He must be wealthy; no caravan can pass without adding to his stores, and yet his subjects show few signs of comfort. Their huts are of the clumsiest construction, and the kilt of calabash fibre is more common than cloth.

Crossing the basin of Kisanga, the road ascends the second pass, a col in the chain, which trends from north to south, by winding laboriously along a ledge in the rough stony hill above the left bank of the chasm down which the Rufita springs. At every re-entering angle the drainage of its fold cuts a ragged irregular ditch, whose stony depths are impassable to heavily laden asses. The summit of the pass, which is reached in about 1 h. 30 m., is the water-parting of this line in Usagara; before it south-westerly, the versant is afterwards south-easterly. Beyond the col the sinuated beds of watercourses and the steep inclines of hills lead in 2 h. to Kiperepeta, a shelving red plain amongst mountains dotted with calabashes and forests of mimosa, and gashed with narrow but deep watercourses. From this point, looking to the westward, an inverted arch discloses a vista of the Maroro basin.

From Kiperepeta to Maroro is a march of 5 h. 30 m. The road descends a rugged incline, covered with cactus, aloe, acacia, and fine trees: thence it dips into the cultivated valley of the Mwega River. This is a rush-girt stream of pure water, about 20 feet broad at the fords in dry weather, and its course is s. 70° w. to the Maroro (?). Like the Mukondokwa it spreads out, except where dammed by the correspondence of the salient and the re-entering angles of the hill-spurs; the road runs alternately over this rocky and jungly ground, fording the stream where there is no room for a path, and sometimes it traverses lagoon-like backwaters garnished with grass, rush, and stiff shrubs, based upon sun-cracked or miry mud. Lastly, it falls by a gentle slope into the basin of Maroro. Grain is procurable in the basin of the Mwega River; herds are seen upon the higher grounds, but the people refuse to part with their cattle.

Maroro, the eleventh station on the Kiringawana line, resembles that of Kisanga; but it is even more fertile, as, the sole being flatter, the irrigation is general. Its principal feature is a perennial mountain stream, which, descending a chasm on the northern side of the basin, winds sluggishly through the plain of muddy-black earth and patches of thick grass, and, diffused through raised and hollow lines of earth, covers the land with holcus, sweet potato, and maize, of which, according to the people, never less than two and

often three and four crops grow during the year. This hill-girt district extends about 3 miles in length by half that breadth: at the southern extremity there is an opening through which the "River of Maroro" escapes into the Rwaha, distant two marches south and west in direct distance, and *viā* Powaga, a station to the westward on the high road to Unyamwezi, four days. The Rwaha, according to the guides in this meridian, is knee-deep during the dry season, and down caravans that turn off to Kilwa strike it a little to the eastward.

Maroro or Malolo,* according to dialect, is the Marorrer of Lieutenant Hardy: it is not, however, a town, but a district, containing, as usual in East Africa, a variety of little settlements. Here the Tembe or square-built village is more common than the round hut. The basin is by no means a wholesome locality: the swamp-vegetation is fetid, the mosquitoes venomous, and the people, afflicted with severe ulcerations, are not less wretched and degraded than the Wakhutu. This is the western limit of the touters from the Mrima: there are seldom less than 150 muskets present, and the Wasagara have learned to hold strangers in horror.

From Maroro to Rudi the route traverses the lower spurs of the Usagara mountains. The time occupied is about 16 hours, and lazy marchers require 5 days, the intermediate stations being Ginyindo, Inena, Ikuka, and Mporota. The third pass is the gap or col of the northern wall of Maroro: as at Kisenga, it flanks the hill rising on the left bank of the river chasm; the distance is short, not occupying more than one hour's march. Thence it descends two gradual inclines and falls into rough and broken ground on the banks of a deep nullah, running to the south-west over rises, falls, and various irregularities, the prolongations of the neighbouring hills that enclose a narrow basin. The land is stony and rugged, with a few fields scattered in a thick bushy jungle. Beyond the nullah the ground is red, and cultivation alternates with scrub and forest full of wild fruit—some edible, others poisonous. Near Mporota the route winds over steps amongst low stony hills, the legs of the spider-like formation; here the lay of the heights is in exceeding confusion. Approaching Rudi the country becomes

* Mr. Cooley ('Inner Africa Laid Open,' p. 56) writes the word Marora, and explains it to mean "trade;" the people call it Maroro, or Malolo, but give no signification. In Dr. Livingstone's Travels Maroro, or Malolo, occurs as the name of a small bush, with a sweet yellow and wholesome fruit, in appearance a dwarf annona (chap. 15).

"Marorrer," says Lieut. Hardy ('Transactions Geogr. Soc. Bombay'), "is a town on its banks" (meaning the Rwaha River). * * * "The tribes inhabiting the W. branch are called Wangarah," (probably a corruption of Wasagara). Mr. Cooley ('Geography of N'yassi') rightly estimates the distance from the coast to Maroro one month's journey. He makes, however, "the river of Maroro," described above, to flow into the *Sieha*, and eventually into the Rufiji. Concerning this curious error some observations will be offered in Chap. XI.

more level, and the red soil is traversed by white-sanded fiumaras, with avenues of the brightest trees. This land belongs to the Wahehe, a tribe differing in language from the Wasagara: the handiwork of the fierce Warori appears in many a shell of smoke-stained village, and the people, rendered desperate by their losses, are notorious pilferers. For a small goat they demand two shukkahs, and they will sometimes supply, at equally exorbitant rates, grain and milk. Tobacco, however, is exceedingly cheap; cakes, weighing about 1·50 lbs. each, are sold at the rate of two to three per shukkah.

Beyond Rudi rugged paths lead for some miles of gradually falling ground over glaring white earth and dull red soil, with thick bush and forest scattered between the eminences, through the last spurs of Usagara and the intermediate stations of Kinyanguku and Murundusi, to the Dhun of Ugogi. The formation of the land is here an elevated undulation, cut by many jagged water-courses and flanked by outlying masses which fall westward into the wastes of the western Marenga M'khali. Where the country opens it displays a wonderful fertility, the effect of subterraneous percolations from the mountains. Nowhere are the tamarind, the sycamore, and the calabash seen in such perfection; second to these are the perfumed myombo and the mkora, the ndabi, the chamvya,* the myongo,† and a large sweet-smelling acacia.‡ Amidst these piles of verdure troops of parroquets and doves, jays and bright flycatchers, find a shelter, and frequent flocks and herds repose beneath the cool shade. The red earth is still dotted with "black-jacks"—the remains of trees which have come to an untimely end. In the fields near the numerous villages rise little sheds to shade the guardians of the crops, and flocks and herds wander over the commons or unreclaimed lands. Water, which is here pure and good, lies in pits from 15 to 20 feet deep, bridged over with tree-trunks. The people draw it in large shallow buckets made of gourds, sewn together and strengthened with sticks. The Wahehe of these districts have a lasting terror of the Warori, and the war-cry is often raised at the approach of a caravan, however peaceable. Provisions are consequently scarce and expensive; tobacco, however, is sold at the rate of two or three cakes, each weighing about 1½ lb., for a shukkah. From Rudi to Ugogi is a march of 11 miles: but caravans, after making the Dhun, usually strike directly westward towards Ugogo, traversing Marenga Mk'hali, by a southern route, the Nya Ngaha.

* The chamvya is a tree well known at Zanzibar, in Khutu, and in Usagara; it bears edible, yellowish-red berries.

† The myongo is a fine tree, whose fruit, a large-stoned, palatable purple plum, is not unlike a damson. Its hard, close wood is used for grain-mortars.

‡ This tree is called by the Arabs sankul, by the Wasawahili mtunduru.

The tribes now tenanting these "East African ghauts" are the Wasagara, with their chief subtribe the Wakwivi, and the Wahehe; the latter a few families inhabiting the south-west corner, and extending into the plains below.

The limits of the Wasagara have already been laid down by the names of the plundering tribes that surround them. These mountaineers, though a noisy and riotous race, are not overblessed with courage: they will lurk in the jungle with bows and arrows to surprise a stray porter; but they seem ever to be awaiting an attack—the best receipt for inviting it. In the higher slopes they are fine tall and sturdy men; in the low lands they appear as degraded as the Wakhutu. They are a more bearded race than any other upon this line of East Africa, and, probably from extensive intercourse with the Wamrima, most of them understand the language of the coast. The women are remarkable for a splendid development of limb, whilst the bosom is lax and pendent.

The Wasagara display great varieties of complexion, some being almost black, and the others are chocolate-coloured. This difference cannot be accounted for by the mere effects of level and temperature. Some shave the head; others wear the Arab's shushah, a kind of skull-cap growth, extending more or less over the poll. Amongst them, for the first time, is seen the classical coiffure of ancient Egypt. The hair, allowed to attain its fullest length, is twisted into a multitude of the thinnest ringlets, each composed of two lengths wound together; the wiry stiffness of the curl keeps them distinct and in position. Behind, a thick curtain hangs down to the nape; in front it is either combed off the forehead, or it is brought over the brow and trimmed short. No head-dress has a wilder or more characteristically African appearance than this, especially when smeared with a pomatum of micaeuous ochre, and decorated with beads, brass balls, and similar ornaments, causing it to wave and rattle with every motion of the head. Young men and warriors adorn their locks with the feathers of vultures, ostriches, and a variety of bright-plumed jays, and some tribes twist each ringlet with a string of reddish fibre. It is seldom combed out, the operation requiring for a head of thick hair the hard work of a whole day; it is therefore not surprising that the pediculus* swarms through the land. None but the chiefs wear caps. All distend the ear-lobe: a hole is bored with a needle or a thorn, and is enlarged by inserting bits of cane, wood, or quills, increasing the latter to the number of twenty. The aperture is kept open by a disk of brass, ivory, wood, or gum, a roll of leaf or a betel-nut, and it serves

* The Arab travellers almost always shave their heads as a preventive against these insects; the Baloch are celebrated for breeding nits in their long and bushy locks.

for a variety of purposes apparently foreign to the member; it often carries a cane snuff-box, sometimes a goat's-horn pierced for a fife, and other small valuables. When empty, especially in old age, it depends in a deformed loop to the shoulders. The peculiar mark of the tribe appears to be a number of confused little cuts between the ears and the eyebrows. Some men, especially in the eastern parts of the mountains, chip the teeth to points like sharks or Wahiaos.

The dress of the Wasagara is a shukkah or loin-cloth, 6 feet long, passed round the waist in a single fold—otherwise walking would be difficult—drawn tight behind, and with the fore extremities gathered up, and tucked in over the stomach: it is, in fact, the Arab "uzár;" probably the most ancient garb used by the Eastern man. They often support it by a girdle of cord or leather. On journeys it is purposely made short and scanty for convenience of running. The material is sometimes indigo-dyed, at other times unbleached cotton, which the Wasagara, however, stain a dull yellow. Cloth is the clothing of the wealthy. The poor content themselves with the calabash "campestre" or kilt, described in a previous page, and with the softened skins of sheep and goats. It is curious that in East Africa, where these articles have from time immemorial been the national dress, and where amongst some tribes hides form the house, that the people have neither invented nor borrowed the principles of rude tanning, even with acacia bark, an art well known to most tribes of barbarians. Immediately after flaying, the stretched skin is pegged, inside upwards, in the sun, and it is not removed till thoroughly cleansed and dried, to prevent shrinking. The many little "peep-holes" in the margin give it the semblance of ornamentation, and sometimes the hair is scraped off, leaving a fringe 2 or 3 inches broad around the edge: the legs and tail of the animal are not removed by "dressy gentlemen." These skins are subsequently softened by trampling, and they are vigorously pounded with clubs: after a few days' wear dirt and grease have almost done the duty of tanning. It is tied over either shoulder by a bit of cord or simply by knotting the corners; it therefore leaves one side of the body bare, and, being loose and ungirt, it is at the mercy of every wind. On journeys it is doffed during rain, and placed between the burden and the shoulder, so that, arrived at the encamping ground, the delicate traveller may have a "dry shirt." Like the Indian ryot's attire, at best it deals imperfectly with the essentials of decency.

Women of the wealthier classes wear a tobe, or double-length shukkah, tightly drawn under the arms, so as to depress whilst veiling the bosom, and tucked in at either side; it is almost as hideous as the European "sacque" of bygone days. Dark

stuffs indigo-dyed and Arab checks are preferred to plain white for the usual reasons. The dress of the general is a short but decorous jupe of greasy skin, and a similar covering for the bosom, open behind and extending in front from the neck to the middle of the body: the child is carried in another skin upon the back. The poorest classes of both sexes are indifferently attired in the narrow kilt of loose fibre.* The children wear an apron of thin twine, like the Nubian thong garments. Where beads abound, the shagele, a small square napkin of these ornaments strung upon thread, is fastened round the waist by a string or a line of beads. There are many fanciful modifications of it: some children wear an apron of tin plates, each the size of a man's finger: most of the very juniors, however, are simply attired in a string, with or without beads, round the waist.

The ornaments of the Wasagara are the normal beads and wire, and their weight is the test of wealth and respectability. A fillet of blue and white porcelains is bound round the head, and more beads appear upon the neck, the arms, and the ankles. The kitindi,† a coil of thick brass wire, extends from the elbow to the wrist; others wear little chains or thick armlets of copper, brass, or zinc: those who can afford it twist a few circles of brass wire under the knee. The arms of the men are bows and arrows, the latter unpoisoned, but armed with cruelly-barbed heads, and spines like fish-bones, cut into the long iron shaft which projects from the wood. Their spears and assegais are made from the old hoes which are brought down by the Wanyamwezi caravans; the ferule is thin, and it is attached to the shaft by a cylinder of leather from a cow's tail, drawn over the iron, and allowed to shrink at its junction with the wood: some assegais have a central bulge in the shaft, probably used like the rungu or knobstick. Men seldom leave the house without a billhook of peculiar shape—

* In the maritime countries the kilt is usually made with the fibre of the ukhindu or brab tree; in the interior with that of the calabash.

† This is a peculiarly African decoration. It is a coil of concentric circles, extending so high that the joint has scarcely room to play. At both extremities the circlets are made a little larger for grace, and the elasticity of the wire keeps them in place. The weight of the kitindi is about 3 lbs., yet the women in some tribes, especially the Wahumba, will wear four of these bulky decorations upon their arms and legs. Those above the elbows and round the ankles, however, are generally half sized, and without the terminal bulges; they appear to compress the limb painfully. The Wanyika of Mombasah and the Wahumba wear the kitindi also under the knee. It is mostly a woman's ornament. In Uwinza and Ujiji men assume the full-sized armlet; and in Usagara, and other parts, their wrists, arms, and ankles are often decorated with half and quarter lengths. The masango, or wires, carried up the country are converted into kitindi, or coil armlets, by artisans. At Usanyembe the value varies from two to four shukkah; at Ujiji, where they are in demand for purchasing ivory and slaves, they become worth four to five shukkah. The kitindi there represents our gold money, as cotton cloth does the silver, and beads the copper coinage of civilized countries.

a narrow sharp blade, ending in a right angle, and fixed in a wooden handle, with a projection rising above the blade. The shield is rarely found on this line of East Africa. In Usagara it is composed of two parallel belts of hardened skin, from 3 to 4 feet in length by 1 to 2 feet in breadth. The material is pegged out to stretch and dry, carefully cleaned, sometimes doubled, sown together longitudinally with a thin thong, and stained black down one side, and red down the other. A stout lath is fastened as a stiffener to the shield lengthwise; and a central bulge is made in the hide, enabling the hand to grasp the wood. The favourite materials are the spoils of the elephant, the rhinoceros, and the giraffe; the common shields are of bull's-hide, and the hair is generally left upon the outside as an ornament, with attachments of zebra and cows' tails. It is a flimsy article, little better than a "wisp of fern or a herring-net" against an English "clotheyard:" it suffices, however, for defence against the puny cane-arrows of the African archer.

The habitations of races form a curious study, and no valueless guide to the nature of the climate and the physical conditions to which men are subject. About Central Usagara the normal African haystack-hut makes place for the tembe, which extends westward a little beyond Unyanyembe. The Tembe, though of Hamitic origin,* resembles the Utum of the ancient, and the Hishan of the modern, Hejaz: it was suggested probably in both lands by the necessity of defence for man and beast. Provided with block-houses at the corners, to prevent dead ground where fire, the only mode of attack, could be applied, this structure would be impregnable to Africans. To a certain extent it is a proof of civilization; the wildest tribes have not progressed beyond the comfortless circular hut, which seems modelled after a mimosa-tree. The form of this building is a hollow square or oblong, generally irregular, with curves, projections, and semicircles: in Usagara, to suit the exigencies of the hill-sides, and the dwarf cones upon which it is built, the shape is sometimes round or oval. On the mountains, and in Ugogo, where timber is scarce, the houses form the fronts of the building; they are built of stout stakes, wattle, and dab, and are rarely more than 7 feet in height. The general roof has usually a slope to the front, and another to the interior, that rain may drain off; it is, however, flat enough to support the grain, melons, pumpkins, and other articles placed there to ripen or to dry. It has no exterior eaves, and it is ascended from the side by the rudest ladder, the inclined trunk of a tree, with steps formed by the stumps of lopped

* According to Mr. Cooley ('Geography of N'yassi,' p. 8) *temba-ndambi* means "mistress of the house," and is the title of the chief wife in Angola.

boughs. In each side of the square one or two doorways are pierced; they are large enough to admit cattle, and though public they often pass through private domiciles. The tenements are divided from one another by party-walls of the same material as the exterior. Each house has two rooms, a "but" and a "ben," separated by a screen of corn-canapes supported by stakes, with a low passage left open for light. The "but," used as parlour, kitchen, and dormitory, opens upon the central square; the "ben" receives a glimmer from the door and chinks, which have not yet suggested the idea of windows: it serves for sleeping, and for a store-room; it is a favourite place with hens and pigeons that aspire to be mothers; and the lambs and kids are allowed to pass the night there. The prism-shaped ceiling is composed of thin poles extending from the long walls to the centre, where they are supported by horizontal beams which run the whole length of the house, and these again rest upon a proportionate number of solid forked uprights. Upon this framework grass and canes are thickly strewed, and above all a thick coating of mud or clay forms the roof. Upon the Kisingawana route, where the villages are poor, the upper part is often a little straw, and the walls are of clods loosely put together. The ceiling is polished to a shiny black with smoke; soot depends in stalactite-shape, and the roofs during the rains are small grass-plots. The floor is merely tamped earth, rough and uneven. The broom, a wisp of grass, a bunch of bamboo-splints, or a split fibrous root, usually sticks in the ceiling—its work is left to the ants. In the hollow enceinte the cattle are milked and penned: it is covered with a thick coat of the animals' earths—dust in the hot weather, and deep viscid mud during the rains. This must be an efficacious fomite of cutaneous and pectoral disease. Near the houses trunks of trees resting on forks are placed horizontally, forming pens to keep the calves from the milch-cows at night. In some villages huge bolsters of surplus grain, packed in tree-bark, neatly corded round, are raised on high poles. Others again have a bandani, or exterior boothy, where the men sit in the shade, and the women husk, pound, and cook their grain.

In some regions, as in Ugogo, these lodgings become peculiarly offensive if not burnt down after the first year. The place is a menagerie of hens, pigeons, and rats of remarkable impudence; scorpions*

* Scorpions, locally called nge, are usually small, and, though they sting spitefully, the pain seldom lasts through the day. As many as three have been observed to fall from a single rafter in the course of a week. In Ugogo there is a green variety, from four to five inches long, which inflicts a torturing wound. One of the slaves attached to the Expedition suffered for nearly two months from a swollen arm in consequence of a sting. The poison of the scorpion, however, seems to act with different degrees of violence upon different constitutions. The Baloch and

and earwigs* fall from their nests in the warm, smoky ceilings; a small xylophagus, with a large black head, rains a yellow pollen from the riddled wood-work; house-crickets chirp from evening to dawn; and large, solitary mason-wasps—the kumbharni† or “potter’s-wife” of Western India—burrow holes in the wall, or raise plastered nests, and buzz about the inmates’ ears. Lizards,‡ often tailless after the duello, tumble from the ceilings; and in the darker corners spiders of peculiar hideousness weave webs of solid construction; cockroaches are plentiful as in an Indian steamer; and the rest of the population is represented by tenacious ticks§ of many kinds, flies of sorts, bugs,|| fleas,¶ and

Arabs rarely complained long. Amongst the former was a greybeard who had been treated at Maskat prophylactically against the pain and venom of the scorpion. He described the treatment as consisting of a cathartic dose in the first instance, followed by an intensely bitter draught, after which he could handle the animal without danger. The Africans, who ignore our common treatment by volatile alkalises, relieve the pain by applying castor and other oils. The Arabs believe that after stinging five times successively the animal dies.

* Earwigs (*forficula*) are very common in all damp places, and they haunt the huts on account of the shade. Apparently they cast their coats before the rainy season. The Africans ignore the superstition which in most European countries has given to this insect its popular name.

† This large hymenopter is of several varieties; some are black and yellow, others a dark metallic blue, and others of a tender green. They are found throughout the country, but in the greatest numbers at Ujji.

‡ The common species is the smooth-skinned Somali lizard (described by Mr. Blyth, ‘Journal of the Asiatic Soc. of Bengal,’ Nov. 1855), with fawn-coloured belly and a brown back, striped with two broad pale streaks extending from the jaws to the tail. Another is a green lizard, of moderate dimensions, and rendered hideous by its knobbed and warty skin. On the banks of nullahs, in Usagara, a species was observed with a bright scarlet head, glowing with metallic lustre, and a coat of tender bluish green. The pil of W. India is common in Khutu; the back is chocolate coloured, and the tail is barred across with five or six blackish lines. It is believed by the people to destroy the white ant. The animal alluded to by Mr. Andersson (‘Travels on Lake Ngami,’ chap. xxiv.), “a singular little snake, about seven or eight inches long, possessing four distinct legs, each provided with toes and nails like a lizard,” was observed at Inenge. Unfortunately the only procurable specimen of this salamander, or Batrachian lizard, was nearly decomposed by the liquid which was used to preserve it.

§ The ricinie in E. Africa are called papazi. It is probably the “pazi bug,” made by Dr. Krapf a rival in venom to the *Argas Persicus*, or the fatal “bug of Miana.” In E. Africa these parasites are found of many shapes, round and oval, flat and swollen after suction, and they vary in size from microscopic dimensions to three quarters of an inch. The houses, especially those into which the young of cattle are admitted, swarm with these pests, one of the principal annoyances of the land. The bite cannot poison, but the constant irritation caused by it is not unlikely, in nervous temperaments, to induce fever and its consequences. A hut thoroughly infested with papazi must be sprinkled with boiling water and swept clean for many weeks before they will disappear.

|| The *Cimex lectularius*, supposed to have been imported from America into England after the great fire of 1666, swarms throughout E. and Central Africa, and is apparently an aborigine of the country. It is impossible to remove a Nyamwezi’s bedstead without causing a shower of these foul insects to fall from the decayed woodwork. These people of hard skins care little for the bite, and consider the odour aromatic.

¶ The common palex is rare, except in some districts,—a pleasant surprise to travellers familiar with Egypt and India.

mosquitoes. The thick planked doors are jealously closed at sunset, after which hour no villager stirs from his home. The people also have an aversion to sleeping in the open air, and thus they supply their cohabitants with nightly rations, which account for their fecundity. Moreover there is no draught to disturb the smaller occupants, consequently they are more numerous than in the circular cottage.

There is little furniture in these abodes. They have usually throughout Usagara, though not in Ugogo, the dwarf cartels which Africans seem to love. Around the walls depend neatly-plaited slings of fibrous cord supporting gourds and vilindo,* or bark-boxes, stuffed with grain and provisions: in the store-rooms, propped upon stones, and often plastered over with clay, there are huge corn-bins of the same material for grain and pulse-granaries. The contrivances for cooking are of the simplest. Grain is ground upon a coarse granite slab, raised at an angle of 25°, about 1 foot above the floor, and embedded in hard mud. The hearth is formed of three Máfigá, or truncated cones, of red or grey clay, sometimes 2 feet high and 10 inches in diameter.† They are disposed triangularly, with the apex to the wall, and open to the front where the fire is made; the pot rests in the interval between them. There is no contrivance to draw off the smoke, which for want of draught curls slowly through the doorways. But smoke and grease are the African's coat and smallclothes: they contribute so much to his health and comfort that he is by no means anxious to get rid of them. From the rafters hang drums and kettledrums, skins and hides in every process, and hooked twigs, dangling from a string, support the bows and arrows, the spears and assegais. An arrow is always stuck in the sooty ceiling for good luck; ivory also is often stored there—hence its dark, ruddy coat of colouring, which must be removed by ablution with warm blood. The rafters also are favourite places for small articles that require seasoning—bows, quivers, bird-bolts, knob-sticks, walking-canapes, reed-nozzles for bellows, and miiko or ladles used to stir porridge. The large and heavy water-pots of black clay, which are filled every morning and evening by the women at the well, lie during the day half empty about the room. In wealthy houses a kilindo or two serves for a wardrobe. The rest of the furniture may briefly be comprised in dwarf stools called kití,‡ and

* The kilindo (in the plural vilindo, a diminutive form of lindo) is a cylindrical shaped box, of various sizes. It is used to contain butter and other provisions, and in it the travelling African carries his clothes and valuables. In Unyamwezi and other countries the store-houses contain large bins of this material, which are called lindo. The lindo forms, also, a most variable grain measure.

† The corn-bins, as well as the tripods, will be recognised in the descriptions by our older travellers of the Bachwana Kafir households.

‡ These little stools generally measure one foot in height by six inches in diameter, with a slightly concave surface for sitting. They have either three or four curved or elbowed legs, and are sometimes provided with a base like the seat to render

cut out of a solid piece of the mninga* or the mpingu,† pestles like capstan-bars, made of the hard mkorongo,‡ and massive mortars,§ shaped exactly like those portrayed in the paintings of ancient Egypt, composed of a trunk of the close-grained mkora.

As a rule, each of these villages has its headman, who owns, however, an imperfect allegiance to the Mutwa or district chief, the equivalent of sultan. His wazir, or favourite councillor, is the Mgosi, and the elders of settlements are called collectively Wabáhá. Their principal distinction is the right to wear a fez or a Surat cap, and a kizbáo or sleeveless waistcoat. They derive a certain amount of revenue by trafficking with slaves: many of the Wasagara find their way into the market of Zanzibar. Moreover the game-laws as regards elephants are here strictly in favour of the Sultan. An animal found dead in his district, though wounded in another, becomes his property on condition of his satisfying his official with small presents of cloth and beads: the flesh is feasted upon by the tribe, and the ivory is sold to travelling traders.

The Wahche, situated between the Wasagara and Wagogo, partake a little of the appearance of both. They are a plain race, but stout and well grown. Though to appearance hearty and good-humoured, they are decided pilferers: they have more than once attacked caravans, and only the Warori prevented them from cutting off the road to Ugogo. During the passage of the Expedition in 1858 they took occasion to drive off unseen a flock of

them more steady. The only ornaments of the kiti are plates of tin let into the seat. These stools are invariably used by the Sultan and the Mgángá, who hold it undignified to sit upon the ground. In Wanyamwezi caravans many porters carry this luxury strapped behind their backs with the legs projecting outwards. It owes its general use to the belief that sitting upon the bare earth causes dysenteric disease. In the 'Narrative of the Austrian Missionaries' who ascended the White Nile in 1846, mention is made of the Bari and other people, who carry about with them similar stools adorned with beads.

* The mninga, or mnenga, is a tall and stately tree, producing a red gum. The wood, of a dark mahogany colour, is used to make large bowls and platters, but it is weak, and suffers from worms. Spears are made from the heart of this tree, and when old and well greased they resemble teak.

† The mpingu, a name also applied to "grenadille" wood and ebony, is the sisam Dalbergia sissoo, or Indian black-wood (a well-known species of bauhinia); it is erroneously called by the Arabs abnus, which properly signifies ebony. It is seen in most parts of E. Africa. The wood is of fine quality and very dark in the heart of the trunk; the people divide it into male and female; the former is internally a dull brickdust red, the latter is of a blacker tint. Spears and axe-handles are made of this wood, which soon, however, when exposed to the air, unless regularly greased, becomes brittle.

‡ The mkorongo is a large tree, with a hard fine-grained wood, common in Unyamwezi; it is selected for rafters, as it best resists the xylophagous insects which abound in the country.

§ This mortar is called by the Arabs mankaa and minhaj, by the Wasawahili "kíno." The pestle in Arabic is madakk or safnah, and in Kisawahili mebi. It extends as far south as the Kafir tribes.

goats; and at night no man, unless encamped in a strong kraal, was safe from their attempts to snatch his goods. On one occasion, being caught in flagrant delict, they were compelled to restore their plunder, with an equivalent as an indemnity. They are on bad terms with all their neighbours, and they unite under their chief Sultan Bumbumu.

The Wahehe enlarge their ears like the Wagogo, they chip the two upper incisors, and they burn beauty-spots in their forearms. Some men extract three or four of the lower incisors: whenever a man without these teeth is seen in Ugogo he is at once known as a Mhehe. For distinctive mark they have two cicatrized incisions on both cheeks from the zygomata to the angles of the mouth. They dress like the Wagogo, but they have less cloth than skins. The married women usually wear a jupe, in shape, behind, recalling the old swallow-tailed coat of Europe, with kitindi or coil bracelets of brass or iron wire on both forearms and above the elbows. Unmarried girls in Usagara are unclothed, except with several strings of large white, yellow, and blue glass beads fastened round the waist to support a long strip of cloth, like the Indian languti, one end of which depends to the shin, and over this is tied a kilt of calabash fibre a few inches deep. The men wear about the middle a thick girdle of thin brass wire wound neatly round a cord of tree-fibre: in addition to the other arms of the Wasagara they carry sime, or double-edged knives, from 1 to 2 feet long, with blades broadening out from the haft, and at the end rounded off to end in a point. The handle is of wood cut into raised rings for the grip, and, when sheathed, half the blade appears outside its rude leathern case. Their tembe are small and peculiarly low, probably to assist escape. They do business in slaves, and have large flocks and herds, which are, however, often thinned by the Warori, whom they dare not meet in the field. Their castrated animals are peculiarly fat and well grown.

CHAPTER V.

THE THIRD REGION : THE PLATEAU OF MARENGA MK'HALL, UGOGO, AND
MEGUNDA MK'HALL.

THE third division of the country visited is a flat table-land extending from the Ugogi Dhun, at the western base of the Wasagara Mountains, in E. long. $36^{\circ} 14'$, to Tura, the eastern district of Unyamwezi, in E. long. $33^{\circ} 57'$; occupying a diagonal breadth of 155 geographical rectilinear miles. The length from north to south is not so easily estimated. The Wahumba and the Wataturu in the former, and the Wahehe and Warori in the latter direction, are migratory tribes who spurn a civilised frontier; according to the Arabs, however, the Wagogo extend three long marches on an average to the north and four or five southwards. This, assuming the march at 15 miles, would give a total of 120. The average of the heights observed is 3650 feet, with a gradual rise westwards to Jiwe la Mkoa 4200 feet (?).

The third region, situated to leeward of a range whose heights compel the south-east trades to part with their load of vapours, and distant from the succession of inland seas, which, stationed near the centre of the African continent, act as reservoirs to restore the balance of humidity, is an arid, sterile land, a counterpart, in many places, of the Kalahari and the Karroos, or South African desert-plains. The general aspect is a glaring yellow flat, darkened by long growths of acrid, saline, and succulent plants, thorny bush, and stunted trees, and the colouring is monotonous in the extreme. It is sprinkled with isolated dwarf cones bristling with rocks and boulders, from whose interstices springs a thin forest of gums, thorns, and mimosas. The power of igneous agency is displayed in protruding masses of granitic formation, which rise from the dead level with little foundational elevation; and here the masses of sandstone, superincumbent upon the primitive base in other parts of the country, often disappear. On the north rises the long tabular range of the Wahumba Hills, separated by a line of lower ground from the plateau. Southwards, a plain, imperceptibly shelving, trends towards the Rwaha River. There are no rivers; the periodical rains are carried off by large nullahs, whose clay banks are split and cut during the season of potent heat into polygonal figures like piles of columnar basalt. On the sparkling nitrous salinas and the dull yellow or dun-coloured plains the mirage faintly resembles the effect of refraction in Desert Arabia. The roads are mere foot-tracks through the fields and bushes. The kraals are small dirty circles enclosing a calabash or other tree, against which goods are stacked: the boothies are made of dried canes and

stubble, surrounded by most efficient *chevaux de frise* of thorn-boughs, and at the end of the dry season they are burnt down by inevitable accident. The want of wood prevents their being made solidly, and for the same reason "bois de vache" is the usual fuel of the country.

The formation of the subsoil is mostly sandstone bearing a ruddy sand. The surface is in rare places a brown vegetable humus, extending but a few inches in depth, or more generally a hard yellow-reddish ferruginous clay covered with quartz nodules of many colours, and lumps of carbonate of lime, or white and silicious sand, rather resembling a well-metalled road or an "untidy expanse of gravel-walk" than the rich moulds which belong to the fertile African belt. In many parts are conical anthills of pale red earth; in others ironstone crops out of the plain; and everywhere fine and coarse grits abound. The land appears condemned to drought, and nowhere is water either good or plentiful. It is found in the serpentine beds of nullahs, and after rain in ziwa,*—pools or ponds,—filled by a gentle gravitation, and retained by a strong clay, in deep pits excavated by the people, or in shallow holes "crowed" in the ground. The supplies of this necessary divide the country into three great districts. On the east is Marenga Mk'hali, a thick bush, where a few villages, avoided by travellers, are scattered north and south of the road. The heart of the region is Ugogo, the most populous and the best cultivated country, divided into a number of small and carefully cultivated clearings by tracts of dense bush and timberless woods, a wall of verdure during the rains, and in the hot season a system of thorns and broomwork which serve merely to impede a free circulation of the air. These seams of bush appear strange in a country populated of old; the Arabs, however, declare that the land is more thinly inhabited than it used to be. Mgunda Mk'hali, the western division, is a thin forest and a heap of brakey jungle. Where hills are, they are thickly clothed with vegetation, probably because they obtain more moisture than the plains.

The climate of Ugogo is markedly arid. During almost the whole year a violent wind sweeps from the eastern mountains. There are great changes in the temperature, whilst the weather apparently remains the same, and alternate currents of hot and cold air were observed. In the long summer the climate much resembles that of Sindh; there are the same fiery suns playing upon the naked surface with a painful dazzle, cool crisp nights, and clouds of dust. The succulent vegetation is shrivelled up and carbonized by heat, and the crackling covering of clayey earth and thin sand,

* The ziwa, in Kisawahili, is equivalent to the S. African "vley" and the Indian "tank." Being temporary and wholly dependent upon rain-water, not upon springs or infiltration, it does not attain the dignity of a lake.

whose particles are unbound by dew or rain, rises in lofty whirling columns like water-sprouts when the north wind from the Wanhumba Hills meets the gusts of Usagara, which are soon heated to a furnace-breath by the glowing surface. These "devils" * scour the plain with the rapidity of horsemen, and, charged with coarse grain and small pebbles, strike with the painful violence of heavy hail. The siccitv and repercussion of heat produce an atmosphere of peculiar brilliancy in Ugogo : the milky haze of the coast climate is unknown. The sowing season, at which time also trees begin to bud and birds to breed, is about the period of the sun's greatest southern declination, and the gradual diminution of temperature displays in these regions the effects of the tepid winds and the warm vernal showers of the European continent. There is no Vuli or Lesser Masika, and thus the climate is unrefreshed by truly tropical rains. About the middle of November the country is visited by a few preliminary downfalls, accompanied by a violent tramontana, and the vital principle which appears extinct starts once more into sudden and excessive activity. Towards the end of December the Masika, or rainy season, commences with the winds shifting from the east to the north and north-east, blowing steadily from the high grounds eastward and westward of the Nyanza Lake, which have been saturated by heavy falls beginning in September. The "winter" seldom exceeds the third month, and the downpour is desultory and uncertain, causing frequent droughts and famine. For this reason the land is much inferior in fertility to the other regions, and the cotton and tobacco, which flourish from the coast to the Tanganyika Lake, are deficient in Ugogo, whilst rice is supplanted by the rugged sorghum and maize. This aridity, however, has doubtless tended to raise the physical development of the population.

Arab and other travellers unaccustomed to the country at first suffer from the climate, which must not, however, be condemned. They complain of violent changes from burning heat to piercing cold, which is always experienced in that region when the thermometer sinks below 55°, of tourbillons, and of swarms of flies. Their thin tents, pitched under a ragged calabash, cannot mitigate the ardour of an unclouded sun ; the salt-bitter water,† whose nitrous

* The African calls them "p'hepo"—synonymous with the Arabic shaytan and the English "devil."

† This peculiarity in the East African karroo may be explained on the chemical decomposition of the atmospheric air, a theory which Barrow ('Travels in Southern Africa,' vol. ii. chap. iv.) applies to the barren plains north of the Cape. He supposes, from the experiments of Von Humboldt, that the "fat and clayey earths are strongly disposed to attract the oxygen from the atmosphere, by which the azotic gas is let loose ; and this gas, entering into combination with fresh oxygen of the superincumbent stratum in an increased proportion, forms nitric acid, from which saltpetre is generated." Thus he accounts for the presence of saltpetre, and for the great diminution of temperature in these 'karroos.' The wind, in fact, is refrigerated by nature as liquors are cooled by art.

and saline deposits sometimes tarnish a silver ring like the fumes of sulphur, affects their health; whilst the appetite, stimulated by a purer atmosphere and by the coolness of the night season, is only kept within due bounds by deficiency in the means of satisfying it. Those who have seen the interior of Africa are profuse in their praises of the climate on their return march. The mukunguru, or seasoning fever, however, rarely fails to attack strangers. It is, like that of the second region, a violent bilious attack, whose consequences are sleeplessness, debility, and severe headache: the hot fit is unusually long and rigorous, compared with the algid stage. In some districts the parexia is rarely followed by the relieving perspirations; and when natural diaphoresis appears, it by no means denotes the termination of the paroxysm. Other diseases are rare, and the terrible ulcerations of Khutu and Eastern Usagara are almost unknown in Ugogo. There is little doubt that the land, if it afforded good shelter, pure water, and regular diet, would be eminently wholesome.

In the uninviting landscape a tufty, straggling grass, like living hay, often raised on little mounds, with bald places between, thinly strewed with bits of quartz and sandstone, replaces the tall luxuriant herbage of the maritime plain, and the arboraceous and frutescent produce of the mountains. The dryness of the climate, and the poverty of the soil, are displayed in the larger vegetation. The only tree of considerable girth is the calabash, and it is scattered over the country widely apart. Its disproportionate conical bole of burnished red, burnt and blackened by sun and rain, is based upon distorted legs, raised from the surface of the ground, with strange excrescences which in pious India would merit a coating of vermillion, and capped by a dome of gnarled arms, each one a tree, here round, there flattened, ending in twigs, the thinnest of which is as thick as a fat man's finger. This mass of timber and large fleshy leaf is covered with delicate flowers of a virgin white, which, opening out at early dawn, bloom through the day and fall faded at eventide. The baobab is amongst trees what the elephant is to animals, apparently the practice-work of nature; in Ugogo the grotesqueness of the general appearance is increased by the folds and wrinkles which form by granulation upon the oblongs where the bark has been removed for its fibre. A variety of frankincense * overspreads the ground; the bark is a deep

* The best species of frankincense is obtained from the dry regions in the eastern horn of Africa. The Arabs, however, declare that they have met with the tree upon the lower slopes of Kilima-ngao, and in the jungles of Chhaga. Dr. Livingstone notices a solitary specimen in the Botanic Gardens of Leanda, which yields a substitute for the true officinal gum. The frankincense of Ugogo is called by the Wazwahili ubani (a corruption of the Arabic luban), and by the people of the country hiddadi. It is collected in the hot weather, and dried over the fire, or scalded in water, so as to prevent it from becoming viscid, as it does when raw, in the rays of the sun. The principal collectors are the up-caravans of Wasyamwezi,

burnished bronze, whitened above with an incrustation, probably nitrous, that resembles hoar frost; and the long woody twigs are bleached by the falling off of the outer integuments. The mukl* or bdellium-tree rises like a dwarf calabash from a low copse containing a curious variety of thorns, some straight and stiff as corking-pins, some curved like cocks'-spurs, others hard and sharp as kites'-claws, others with a double armature turned back to back which defies a garment to escape them. The succulent plants, cactus, aloe, and euphorbia, will not burn; the air within expands with heat, and the juices gushing out extinguish the flame. Amongst the various gum-trees there is strange difference of colour; one will display under the withered yellow pellicles a bark of the tenderest sky-blue, others show a greenish and coppery burnish, others are ghastly white with decay,† and almost all are partially ruddy with the long galleries of white ants. Amongst various salsolæ, or saltworts, the shrub called by the Arabs arak,‡ with its currant-like bunches of fruit, is conspicuous for its evergreen verdure; the ragged and stunted mtungulu § rains its apples upon the ground; and the mbembu,|| in places sheltered from the sun, bears a kind of medlar which is eagerly sought by the hungry traveller. The euphorbiæ here rise to the height of 35 or 40 feet, and the hard woody stem throws out a mass of naked arms, in the shape of a huge cup, impervious to the midday sun.

Wild animals abound throughout these jungles, and the spoor lasts long upon the crisp gravelly soil. In some districts they visit by night the raised clay water-troughs of the cultivators. The ele-

who carry it to their homes, and use it to fumigate and perfume their persons and clothes. The Arabs, who are well acquainted with it, have as yet done nothing towards exploiting it.

* The Arabs declare the mukl (مُكَل), or bdellium (*Balsamodendron Africana*num?), of Ugogo to be of good quality. Rubbed upon a stone and mixed with water it is applied with a pledge of cotton to sluggish and purulent sores; and women fumigate with it after parturition. The Africans ignore its use, and the Baloch, though well acquainted with the bdellium, gugal or guggur, in their own country, did not observe it in Ugogo. As has been mentioned, the mukl of E. Africa was alluded to by the traveller Iba Said in the thirteenth century. May not the *μαγλη* of the Periplus, which appears in chap. xii., amongst the names of gums and drugs, be a corruption of the Arabic *مُكَل*?

† The people, like those of S. Africa, avoid eating the gums of the mimose, and other trees, under the impression that they destroy digestion. The Somali, on the other hand, have less prejudice against the food.

‡ This capparis (*Sodata*?), also termed irák and siwák, is as common in Ugogo as it is in Arabia and Sind. Throughout the western world it forms a favourite tooth-stick, and in some countries, according to Dr. Barth ('Travels in Africa,' chap. lxxv.), the berries are pickled.

§ The mtungulu is a stunted and ragged tree, common in Usagara and Unyamwezi. Its small green fruit, not being eaten by man or beast, is probably poisonous.

|| The mbembu, also called mbura-mbura, is probably the "milo" of Dr. Livingstone.

phant prefers the thick jungle, where he can wallow in the pools and feed delicately upon succulent roots and fruits, bark, and leaves. The rhinoceros loves the dark clumps of trees, which guard him from the noonday sun, and whence he can sally out all unexpected upon the assailant. The mbogo, or *Bos Caffer*, driven from his favourite spots, low grassy plains bordering on streams, wanders, like the giraffe, through the thinner forests. As in Unyanwezi, the roar of the lion* is often heard by night, and the cry of the ostrich † by day. These birds are numerous in the district of Ugogo, where their eggs may sometimes be bought fresh : they are at once wild and stupid, timid and headstrong : their lengthened strides and backward looks announce terror at the sight of man. It is impossible to stalk them in the open grounds, which they prefer. The leopard and the cynhyena, the koodoo and the different species of antelope, are more frequently killed in these deserts than in any other part of the line. Hog ‡ of reddish colour, and hares § with rufous fur, are sometimes started by caravans. The hyrax of the Somali country basks upon the rocks and boulders, and the carapace of a small land turtle, called khasa, fastened to a branch, serves as a road sign. The khwalu, a small green parrot with yellow shoulders, the upupa or hoopoe, a great variety of

* The lion upon this line of E. Africa is often heard, but rarely seen ; on only two occasions his foot-prints appeared upon the road. The king of beasts, according to the Arabs, is of moderate stature. He seldom attains his maximum of strength, stature, and courage, except in plain countries where game abounds, as in the lands north of the Cape, or in hills and mountains, where cattle can be lifted at discretion, as in Northern Africa. In Unyanwezi his spoils, which are yellow, like those of the Arab lion, with a long mane, said to hang over the eyes, and tinged whitish under the jaws, become the property of the Sultan. The animal is more common in the highlands of Karagwah than in the low countries ; he has, however, attacked the mbogo, or wild bull, and destroyed cattle within sight of the Arabs at Kazeh, in Unanyembe. He is rarely a man-eater ; this peculiarity, according to some writers, being confined to old lions, whose worn teeth are unfit for fight.

† The "polygamous bird" was first observed on the Ugogo plateau ; it extends, however, through Unyanwezi and Usukuma to Ujiji. The eggs are sold, sometimes fresh, but more generally stale. Emptied and dried, they form the principal circulating medium between the Arab merchants and the coffee-growing races near the Nyanza Lake. They are cut up and ground into ornamental dishes and crescents. The young birds are caught, but are rarely tamed. In Usukuma the bright and glossy feathers of the old male are much esteemed for adorning the hair ; yet, curious to say, the bird is seldom hunted. Moreover, these E. Africans have never attempted to export the feathers, which, when white and uninjured, are sold, even by the Somal, for 8 dollars per lb.

‡ Hog is found in several parts of E. Africa, and the people describe a species which appears to be the musked boar (*Sus larvatus*) of Southern Africa. The people have no aversion to pork, but they do not breed pigs.

§ The hare, generally called kitangure, is found, though rarely, throughout the country. On one occasion the porters of the Expedition ran down a fine specimen. The people of E. Africa have none of the fanciful legends concerning this animal so prevalent amongst the Namaquas and other southern tribes ; in fact, bestial superstition is rare in these latitudes.

fly-catchers, larks with jet black heads and yellow bodies, small bustards, hornbills,* nightjars, green pigeons,† sparrow-hawks, and small doves, are seen in every jungle. Near the settlements the white-necked raven and the common chil of India ‡ attest the presence of man, as the monkey does the proximity of water. The nest of the loxia swings to and fro in the fierce simoom; the black eagle of Somaliland,§ a splendid bird, towering shily in the air, with his light under-plume gleaming like a silver plate, and large vultures (condors?), flocking from afar, denote the position of a dead or dying animal.

Until late years the Wagogo, being more numerous than they are now, deterred travellers from traversing their country: in those days the road to Unyamwezi, running along the left or northern bank of the Rwaha, through the Warori tribe, struck off near Usanga and Usenga. It is related, when the first caravan, led by Jumah, the diwan of Saadani, entered Ugogo, that the people, penetrated with admiration of his corpulence, after many experiments to find out that it was not fictitious, determined that he was and must be the deity. Moreover, after coming to this satisfactory conclusion, they resolved that, being the deity, he could improve their country by heavy rains; and when he protested against both these resolutions, they proposed to put him to death. A succession of opportune showers released him. By degrees the ever-increasing insolence and violence of the Warori drove travellers to this northern line, and the Wagogo learned to see strangers without displaying this Libyan mania for sacrificing them.

Three main roads, leading from Western Usagara westward, cross the Desert of Marenga Mk'hali.|| The most northern is called Yá Nyiká—of the wilderness—a misnomer, if the assertion of the guides be correct that it is well watered, and peopled by the subjects of eight sultans. The central line, described in these pages, is called, from its middle station, Marenga Mk'hali: it is invariably preferred when water is scarce. The southern road is termed Nyá Ngáhá, a continuation of the Kiringawana route,

* The Buceros, or hornbill, is everywhere common. It is a dull-coloured bird of peculiarly lank form. The varieties are mentioned in Chap. VI.

† This Scansor, called in India the "green pigeon," is common throughout E. Africa, as in the regions about the Leeambaye, visited by Dr. Livingstone.

‡ The Chil, or common Indian kite (*Milvus Govinda*, or *Falco cheela*), is not uncommon in the cultivated lands. The Ukab, or *Pernopterus*, the sacred vulture of ancient Egypt, so generally found throughout Eastern Asia and Africa, even to the Cape, was not observed.

§ This splendid accipiter (the Bateleur eagle of Levaillant), called by the Somal abodi, and supposed by them to injure children with his shadow, is often seen in E. Africa. He is, however, wild and suspicious, seldom venturing within shot.

|| This "brackish water" must not be confounded with the district of the same name in Central Usagara, described in Chapter IV.

previously alluded to : it has provisions, but the people cause much trouble.

Ugogi is subject to a headman, " Ngoma Mroma," known upon the coast, where he has frequently traded, as Sultan Makande. He is a fugitive Mgogo, who has risen to power by superior rascality, upon the strength of which he takes black-mail from travellers. He is an old man with a bald head, a wrinkled face, ear-lobes enormously distended, huge feet, and a stalwart though withered frame. His dress is a greasy " barsati," fastened at the waist with a small cable of wire ; a broad ivory bracelet adorns his right wrist ; a copper ring is on his left, and his feet are protected by coarse sandals of untanned hide. He exacts a share of ivory from elephant-hunters, and he overwhelms merchants with many words.

From Ugogi to the Ziwa or Pond, the eastern limit of Ugogo, are four stations, which, as they cannot supply provisions, and as water is found only in one spot during the dry season, are generally accomplished in 4 marches. The first, which is a Tirikeza, places the caravan in 4 h. half way between Ugogi and Marenga Mk'halie. As the traveller leaves the mountains of Usagara his horizon is bounded north and south by gradually-thinning lines of lumpy, outlying hills, which extend, like a scorpion's claws, towards the west. Before emerging from Ugogi the road winds over a grass country, thickly speckled with calabashes ; square tembe appear on both sides, and there is no want of cattle and flocks. As the villages and fields disappear the land becomes a dense thorny jungle, based upon a red soil : the ground, falling gradually westwards, is broken by a single hill shoulder and some dwarf descents. The kraals are for the most part mere holes cut in the bush ; the slidings of elephants' feet upon the last year's clay, and some deep watercourses, show that the land is not always dry. About the 6th m. the western prolongation of the subranges falls into the plain, and, when tired of walking, the porters encamp upon any patch of yellow grass that offers clear room in the thorny thicket. The complement of the march to Marenga Mk'halie—4 h. 40 m.—spans green barrens and plains of dry white grass : heaps of boulders protrude in places from the clayey surface, and the lower levels show signs of extensive inundation. After another thick and thorny bush, a grassy plain leads to broken ground, the halting-place of slow caravans, at the bottom of a rocky step, which appears to be an offset from the Rubeho range. The eastern face is cut by a torrent-bed too rough and precipitous for ascent, and the path winds climbing up the loose blocks and fixed boulders of the rise on the right bank of the gap. In this lower part of the bed there is not unfrequently a supply of water, but caravans will not allow animals to drink of it, under the impression that it is

poisonous.* The step is of primary formation—grey syenite, coloured quartzes, hornblende, and greenstone, whilst layers of talcose slate and schists glitter upon the surface. Half-way up the height there is a little platform of 150 feet extreme breadth, with a sloping and irregular floor, where black-green pools fed by springs, and the residue of the rains which fill the torrent, lie in muddy holes with broad fringes of silky grass. Travellers drink without fear of the Marenga Mk'hali, which, despite its name, is rather soft and slimy than brackish; and the footprints of many wild beasts—rhinoceros, giraffe, and antelope—appear upon the brink. It sometimes dries up in the heart of the hot season, and then deaths from thirst occur amongst the porters, who, mostly Wanyamwezi, are not wont to practise abstinence in this particular. “Sucking-places” are unknown; and though a traveller from South Africa might detect water-bearing bulbs, none have been discovered by the aborigines. The East African is, as a rule, so plentifully supplied with the necessary, that he does not care to provide for a dry day by unusual means. Up-caravans ascend a second ladder of rock, where they find a small, clear level for encampment. A third gradient, also too steep for laden asses, leads to the summit, and places the traveller a few feet above the eastern half of the Lesser Desert. This is the last of the rises: between Marenga Mk'hali and Western Unyamwezi the land, though rolling, has no sudden elevations on the line of road.

From the midway station to the Ziwa is a distance of about 11 h., divided by a Tirikeza on the first day. From the summit of the Marenga Mk'hali step the country begins with a level of dense thorny jungle. Southwards a hill runs parallel with the road; and about 4 m. to the north the flanking subrange of the Rubeho Mountains terminates in a point. Ensues a level of open grassy plains—black earth, showing shallow inundations during the rains, and in places covered with pebbles; the centre is a broom and a thorny coppice, upon rich red and yellow clay. There is a gradual descent towards the west and south-west; and on both sides, but higher on the right hand, rise blue cones, some single, others in pairs, like “brothers.” The lower grounds show huge single blocks of weathered granites standing out abruptly from the surface. The encamping-place generally chosen is near a stony hill well veiled with cactus and mimosa. Calabashes grow at the base, and, hard by, a sandy surface-drain, in which water may be at times procured by clearing out the pits, is enclosed by lines of

* This assertion, suspected of being a “traveller’s tale,” was confirmed by the Arabs of Unyanyembe, who declared that the country people never water their flocks and herds below the hill. There may be some poisonous vegetation in the few yards between the upper and the lower pools, but no one offered any explanation of the phenomenon.

green trees that shelter deer and antelope. The fourth day places the traveller, after marching through the usual jungle and plain, at the Ziwa, on the eastern frontier of Ugogo, and distant 26 geo. rectilinear miles from Ugogi.

This piece of water, 3100 feet above the sea, occupies the lowest western level of Marenga Mk'halie, the deepest of the many inundated grounds lying to the north, the north-east, and the north-west. It greatly varies in extent : in September, 1857, it was a slaty sheet of water, with granite projections on one side, and about 300 yards across ; the centre only could not be forded. The bottom and the banks are of retentive clay ; a clear ring, whence the waters have subsided, margins the pool, and beyond it lies a thick dry jungle. In early December, 1858, nothing remained but a surface of brown, crumbling, and deeply-cracked mud, and, according to travellers, it had long, in consequence of the scanty rains, been in that state. Caravans encamp at the Ziwa whenever they find water there. The country around is full of large game, especially elephants, giraffes, and zebras, who come to drink at night ; a few widgeon are seen breasting the little waves ; wild-pigeons, and "kata,"* of peculiar plume, flock there with loud cries ; and at eventide the pool is visited by guinea-fowl, floriken, curlews, peewits, and hosts of small birds. When the Ziwa dries up, travellers usually encamp in a thick bush, near a scanty clearing, about 1 m. to the north-west, where a few scattered villages of Wagogo have found dirty white water, hard and bad, in pits varying from 20 to 30 feet in depth, with shallow clay basins from which cattle drink. Here as elsewhere the only trough is a small basin sunk in the retentive clayey soil, and surrounded by a little raised circle of mud and loose stones. A demand is always made for according permission to draw water—a venerable custom,† which may not be broken without bloodshed. To prevent exhaustion, the people throw euphorbia, asclepias,‡ and similar plants, after a certain hour into the well, and when not wanted it is bushed over to keep off animals, and to check evaporation.

At the Ziwa the regular system of kuhonga, or black-mail, so much dreaded by travellers, begins in force. Up to this point all

* The variety resembles, though somewhat larger, the Pterocles Lichtensteini, sent from the Somali country and identified by Mr. Blyth.—'Journal of the Asiatic Society of Bengal,' No. IV. of 1855.

† In Deut. ii. 6, the Lord says to Moses, "Ye shall buy meat of them (the Edomites) for money, that ye may eat; and ye shall also buy water of them for money, that ye may drink." There are several similar allusions in the Old Testament.

‡ Mr. Andersson ('Lake Ngami,' chap. xix.) describes the effects of the Euphorbia candelabra used by the Hill-Damaras, and other tribes, to poison water ; it can be detected only by its peculiar clay colour, but it has caused serious mischief. Dr. Livingstone (chap. viii.) observes that the Euphorbia arborescens, which is fatal to the equine race, acts as a drastic purgative on men and oxen.

the chiefs, except Kiringawana, are contented with little presents ; but in Ugogo, and at the ferry of the Malagarazi River, tribute is taken by force, if necessary. None can evade payment ; the porters, fearing lest the road be cut off to them in future, would refuse to travel unless each chief is satisfied ; and when a quarrel arises they throw down their packs and run away. There is no regular list of taxes ; the sum is fixed by the traveller's dignity and outfit, which, by means of his slaves, are as well known to every sultan as to himself. Properly speaking, the exaction should be confined to the up-caravans ; from those returning a head or two of cattle, a few hoes, or some similar trifle, would be ample. Such, however, was not the experience of the Expedition. When first travelling through the country the "Wazungu" were sometimes mulcted to the extent of 50 cloths by a single chief, and the Arabs congratulated them upon having escaped so easily. On their downward march they pleaded, against a second demand as exorbitant as the first, the custom of the caravans, who are seldom fined in more than two cows or a pair of jembe (iron hoes) ; to this the chiefs replied, that as they never expected to see white faces again, it was their painful duty to make the most of them.

The kuhonga, however, is not unjust. In these regions it forms the custom-dues of the government : the sultan receives it nominally, but he must distribute the greater part amongst his family and councillors, his elders and attendants. It takes the place of the fees expected by the balderabba of the Abyssinians, the mogasa of the Gallas, the abban of the Somal, and the ghafir and ratik amongst the Bedouin Arabs, which are virtually assertions of supremacy upon their own ground. It is confined on this line to Ugogo and the Malagarazi for the same reason—the caravans have no other route. These people have not the idea which seems prevalent in the south, namely, that any man has a right to tread God's earth gratis as long as he does not interfere with property. If any hesitation about the kuhonga be made, the first question put to the objector will be, Is this your ground or my ground ? The practice, which is sanctioned by the customs of civilized nations, is however vitiated in East Africa by the slave-trade : it becomes the means of intrusion and extortion, insolence and violence. The Wagogo are an importing people, and they see with envy long strings of what they covet passing from the interior to the coast through their territory. They are strong enough to plunder any caravan ; but violence they know would injure them by cutting off communication with the markets for their ivory. Thus they have settled into a compromise, and their nice sense of self-interest prevents any transgression beyond the bounds of reason. The sultans receive their kuhonga, and the subjects entice away slaves

from every caravan, but the enormous interest upon capital laid out in the trade leaves a balance in favour of the merchants. The Arabs, however, declaring that the evil is on the increase, propose many remedies—such as large armed caravans, sent by their government, and heavy dues to be exacted from the Wagogo who may visit the coast. But they are wise enough to murmur without taking steps which would inevitably increase the evil. Should it ever pass a certain point, a new road will be opened, or the old road will be reopened, to restore the balance of interests.

At the Ziwa bullocks, sheep, and goats—poultry is everywhere procurable except in the jungle—grain in abundance, water-melons and pumpkins, honey and curdled milk, are brought for sale. Mrema, the sultan, demands a shukkah of domestics, an Arab check, and a few strings of beads, as his blackmail. This is not exorbitant; but the chief is a small man—a “mere thief,” as these lands call a poor noble, and his utmost vengeance would be to discharge a few flights of arrows into the sleeping camp. Moreover, caravans usually combine into a formidable body between Usagara and Unyamwezi.

From the Ziwa a march of 3 h. conducts to Kifukuro, the easternmost saltanat or independent district of Ugogo proper. After passing through the savannahs and the broom jungle of the lower levels, the path, which seems the work of elephants, crests a wave of land; the position, open only to the southwards, enables the traveller to connect his sectional views by a general prospect: thence it descends into the cultivated lands of Kifukuro. This is a clearing of deep red soil, about 4 miles in diameter, studded with square villages, but poor in provisions. The low and hot land around is an expanse of dwarf wood and stiff coarse tufty grass, green or yellow according to the season. Northwards is a depression—a stretch of deep brown jungle, with patches of yellow grass and small outlying cones. This low ground, much frequented by elephants, extends to the base of a long and tabular range of fair blue hill, which here diverges a little from the parallel: three distant cones, rising above its summits, are pointed out as the haunts of the Wahumba; southwards scattered eminences rise a few feet from the plain. Water is here found in stagnant pools, puddled and offensive to more senses than one: a better supply is to be obtained from a hole in rocky ground hard by. The traveller must halt at Kifukuro till he has settled kuhonga with the mtemi or sultan Miyandozi, whose interest it is to detain him that the people may get rid of their spare grain. Pretexts are never wanting. On the day of arrival it would be considered indecent haste to trouble His Highness. On the next day business commences with a visit to the potentate, whom, like all of his rank in Ugogo, dignity forbids to leave his hovel, and there, in presence of his wife and

brethren, his minister and his council, an inadequate offer is made, and the offerer is dismissed with ignominy. On the third day, which must be spent in haggling with the courtiers before His Highness, who maintains a solemn silence,—certainly the most effective plan,—the present is reformed; but Her Highness, objecting to a bit of chintz, possibly seizes a huge wooden ladle and hoots the offender out of doors. The fourth day is one of ease and indolence: the merchant receives a message that the court is “sitting upon pombe,” which he knows to signify that His Highness, with his spouse and court, are drunk. Then the present, again offered with perhaps a few additional strings of beads, is graciously accepted; but the affair is by no means concluded. On every occasion of a blackmail or a gift to an African sultan, some addition is demanded, and, if refused, the present will be sent back and negotiations must re-open. Finally, the wives and the children, the brothers and the cousins, the friends and the elders of His Highness, will put in a claim for something, and not being forbidden by court etiquette to visit the stranger, they will weary him till, as the Arabs say, his eyes are white. If the merchant loses his temper and looses a hot word, he is instantly mulcted in cloth: if in the crowd he happens to touch a woman or to offend a boy, cloth is the alternative. The consequence of these ridiculous delays is, that the fiery Arab never fails to depart from every station in Ugogo with rage in his heart and curses upon his tongue. At Kifukuro cattle and cloth, iron and beads, are the articles in demand: Miyandozi, the sultan, a petty chief oppressed by his western neighbour Magomba, took from the Expedition two Arab checks and ten shukkah of domestics and kaniki. He threatened a visit, which was declined on account of its expense, and, as usual, he made no return-present.

From Kifukuro the caravan traverses a plain of black earth and thin bush, broken by deep sun-cracks and sandy nullahs, here steep, there shallow, which pour torrents during the rains. The latter half of the march, which occupies altogether 10 h., is alternately thick rugged jungle and grassy rolling plain. This day ends at the Kanyenyé district, called from its consequence the “great Ugogo:” the extent of the clearing is about 10 miles. The path, a glaring dusty line, runs over a red tamped soil, dotted with huge calabashes and stunted mimosas: water is found in wells, or rather pits sunk from 10 to 12 feet in the clayey soil, or in the sandy beds of the several fumaras. Flocks and herds abound, and the country is as highly cultivated and populated as the saline nitrous earth, in places full of saltpetre, admits. Noble game abounds in the western portion of the Kanyenyé district. The chief is one Magomba, a man of considerable influence. “Arrow-heads,” who never deigns

to call upon an Arab merchant, could not restrain his desire to look upon white men : he appeared in the shape of a black and wrinkled elder, drivelling and decrepit, with half-bald head, large brass-wire anklets, and a barsati loin-cloth, from which grease and butter had effaced the colour. His one-soled African sandals were old and tattered, and his earlobes were split almost to tearing by the weight of large brass rings, supported by a string passing over his poll. He was systematic in his extortions. When the Expedition was encamped at the Ziwa he sent a sheep, explaining his desire to see Wazungu—a compliment requiring the usual acknowledgment. On arriving at his head-quarters appeared an oily cabinet of wazirs and elders, who would not depart without receiving their "respects." The next demand was made by his favourite wife, a peculiarly hideous old woman with more wrinkles than hairs, and attended by maids of honour as unprepossessing as herself : she was not to be dismissed without a fee of six domestics. At last, accompanied by a mob of courtiers, who darkened the tent, appeared the great man in person. He had so far mastered his pride and his affection for strong drink ; yet he had ever an eye to the main chance. On this and on a subsequent occasion he delayed the Expedition for several days on the pretext that, having taken up the sword to adjust a case of uchawi or black magic, he could not settle at once the weighty matter of kuhonga or blackmail. He took from the Expedition goods to the value of 50 shukkah, which, in Ugogo representing 50 dollars, are equivalent to 10*l.* 8*s.* in Zanzibar. He afterwards boasted of his generosity, declaring truly enough that he might have laid hands upon the whole outfit ; and, before departure, he exacted an oath that the Wazungu would not smite the land with drought or fatal disease. His return-present was the leanest of calves, when his son, who had long been awaiting his opportunity, put in a claim for sundry domestics. The vanity of resistance on these occasions has been shown : even the Arab pedlar congratulates himself upon escaping with the loss of from 13 to 30 shukkah.

From Kanyenye two footpaths lead to the district of Khokho. The northern, which is generally divided into marches of 5 h. and 7 h. 40 m., after emerging from the glaring white and red plain dotted with fields, villages, and calabashes, passes by sundry pools, which are dried up in the heart of the hot season, and leaving the straggling growth of chamaerops and verdurous thorns, which betoken the vicinity of water, enters through a thin jungle of mimosa and grass-bunches, a thick bush cut with elephant tracks, where caravans almost always lose their way. Beyond the bush lies a broad open and grassy plain, striped with southwards-trending sandy watercourses of easy ascent and descent, and lined with a green

aromatic vegetation, in which the tall palm suggests a resemblance to the Muhamma district in the Mukondokwa range. Westward this flat is limited by red broken ground, and the path, ascending a rough and rugged ladder of thorn-clad rocks, rises through thick jungle to the summit of a ridge, which initiates a higher elevation. There being no water upon this height, caravans usually make a Tirikeza and encamp for the night in some dwarf clearing. On the next morning they set out betimes for a long march of 7 h. 40 m. along a narrow broken path over rolling ground, now dipping, then rising, through the densest bush of various thorns garnished with calabashes, reddened by intense heat. On the left of the road are low masses of bristling hill, where the subjects of the Usekhe sultan keep watch to prevent travellers evading the duties claimed by their lord. After traversing a fine game jungle, sandy watercourses, and pools of a peculiarly sweet though muddy water, the road suddenly emerges from the jungle and abuts upon the neatly-ridged fields, the tree-shaded villages, and the wells bethronged with cattle, which denote the sultanat of Khokho. It is the eastern frontier of Uyanzi—a name applied to the regions as far westward as Tura. This northern line of road has lately been closed by sundry little skirmishes, which have deterred the timid Wanyamwezi porters from attempting to evade the rights of the Sultan of Usekhe.

The southern and now the only practicable route also ascends the stony ridge and abuts at the clearing of Usekhe. On this line are first observed the curious evidences of igneous action, which extend westward throughout Mgunda Mk'halu, and Eastern Unyamwezi, and northwards to the shores of the Nyanza Lake. These outcrops of grey granite and syenite appear in the most fantastic shapes, rising abruptly and perpendicularly almost without foundationary elevations from the mould of a dead plain, or bristling upon a base of low conical hills—as in gypseous formations the hugest boulders are planted upon the lowest and broadest foundations. In the various shapes of rounded blocks, conical boulders, here single, there in piles or ridges, some stiff and straight as giant ninepins or "Tabara's wife," others split as if an alley or a gateway passed between them, at a distance they might be mistaken for Cyclopean walls, towers, steeples, minarets, domes, castles, dwelling-houses, and loggans. Some of them, when struck, give forth a metallic clink, and, not unfrequently balanced upon points, they remind the European of his tradition-bearing rocking-stones. They are often overgrown with a silky white grass, which decaying forms, with the external degradation of granite which they have effected, a thin cap of soil sufficient to crown their summits with aloes and tufty cactus,* whilst huge creepers, imitating trees, project their

* These stomatiferous plants seem by the formation of the skin rather to imbibe nourishment from the oxygen of the atmosphere than to depend upon the supplies of the earth.

gnarled limbs from the deeper crevices. Seen through the trees, they are an effective picture in the landscape when the sunbeams fall bright upon their rounded summits and smooth sides, here varnished with a mildew-like lichen of the tenderest green, there yellowed by the burning rays, and there streaked with black, shining as if glazed by the rain, which, collecting in cupfuls upon the steps, at times overflows in mimic cataracts.*

Usekhe is an ancient clearing, bristling with blackjack and almost surrounded by granitic boulders: it lies like a fertile patch in a thin forest, peculiarly rich in grain. The Sultan, Mala Mikono, also called Ganza Mikono, has but lately risen to his father's rank. He pushes his fortunes by closing the northern road. Travellers rarely escape without a severe exaction, for, placed between two notorious plunderers, the rival chiefs of Kanyenyé and Khokho, he cannot derogate by rating his claims below theirs.

A march of 3 h. 30 m. through a thin forest leads from Usekhe to Khokho, a district now considered the nucleus of difficulties in Ugogo. It is held dangerous to halt near the villages: the people will rob even by day; they beat strangers who would drink without payment at their wells; during the sowing season they will forcibly detain Wanyamwezi caravans for a fortnight or three weeks to hoe their fields; when travellers display over-economy, they reduce them to submission by an order forbidding their fellows to supply food, and they are abetted in all their villainies by the chief M'ána Myáhá, properly called Mágúru Máfúpi, or "Shortshanks." This petty tyrant, who is, however, the most powerful of the Wagogo chiefs, cannot even rob amiably. He received a deputation from the Expedition, headed by the Ras Kafilah, Said bin Salim, outside his hut, and declared, through his two wazagira, or chief councillors, that he would be satisfied with nothing less than six porters' load of cloth. At the end of five days he was pleased to grant a surly demission, after exacting upon various pretexts a fine of beads and 40 shukkahs. He disdained a visit, and refused to sell his asses because the kind of cloth which he most coveted was not forthcoming. In Khokho the finest Arab checks and the expensive coral beads are the principal articles of barter.

Passing out of the Khokho plain by a northern track, which gradually bends westwards, the traveller makes a desert march of 6 h. 20 m. through a rough, thorny, and waterless jungle, thick at the outset, but gradually thinning out, where the jasmine flowers and where the frankincense is used for fuel, which leads by a gradual descent to a grassy plain of black and sun-cracked earth, dotted with swamps during the rains, to Mdaburu, the fifth and westernmost district of

* These blocks greatly resemble the features of the Paarlberg described by Barrow ('Travels into the Interior of Southern Africa,' chap. ii.), and other features of rocky scenery in S. Africa.

Ugogo. This is a fertile depression of brick-red earth, bisected by a broad, deep, and sandy fiumara, which, trending southwards, supplies from five pits water in plenty even at the driest season. It is belted on all sides by a jungle, over whose dull line appear the summits of low blue cones and long streaks of azure ridge, beautified by distance into the semblance of a sea. The clearing rapidly encroaches upon the skirts of Mgunda Mk'halí, and the Expedition returning in 1858 found settlements growing up in the bush of ages. The royal village is of great extent compared with its neighbours: the present tenant is Sultan Kibuya, a man of Mkimbu origin, who has raised himself to power amongst the Wagogo. He contented himself with 19 shukkahs—a moderation to be accounted for by the thinness of the population on this outskirt-district, and by his dread of the Wahumba and Maguru Mafupi. At Mdáburu provisions for a desert march of eight days are to be collected with difficulty: the people are unwilling to take any but the most expensive cloths and red coral beads in barter for grain and milk. Grain is scarce and dear: about 6 shukkahs will purchase half rations for a caravan per diem, and, when no stores have been laid in, considerable delay is experienced in collecting them.

From the Red Vale of Mdáburu three main lines traverse the desert between Ugogo and Unyanwezi. The northernmost, called Njia T'humbi, leads in a west-north-westerly direction to Usukuma. Upon this track are two sultans and several villages. The central "Karangásá," or Mdáburu, is that which will be described in the following pages. The southernmost, termed Uyánzi, sets out from Khokho, and passes through the settlements known by the name of Jiwe lá Singa. It is avoided by the porters; they dread to incur the wrath of Sultan Kibuyá, who would resent their omitting to visit his settlement, Mdáburu.

These three routes pass through the heart of the great desert and elephant-ground "Mgunda Mk'halí"—explained by the Arabs to mean the "Fiery Field."* Like Marenga Mk'halí, it is a desert, because it contains no running water or wells, except after rain. The name is still infamous, but its ill-fame rests rather upon tradition than actuality; in fact, its dimensions are rapidly shrinking before the torch and axe. About fifteen years ago it contained twelve long stages and several Tirikeza; now it is spanned in eight marches. The wildest part is the first half from Mdáburu to Jiwe lá Mkoá, and even here it is reported villages of Wakimbu are rising rapidly on the north and south of the road. The traveller, though invariably threatened with drought and the death of cattle, will undergo little hardship beyond the fatigue of the first three forced marches through the "Fiery Field;" in fact, he will be

* Mgundá, in Kinyanwezi, is the equivalent of the Kisawahili "Shamba," a plantation, field, or clearing. The adjective *mk'halí* has been explained in Chap. IV.

agreeably surprised by its contrast with the desert of Marenga Mk'halí.

From east to west the diagonal breadth of Mgunda Mk'halí is 140 miles. The general aspect is a dull uniform bush, emerald-coloured during the rains, and in the heats a network of dry and broom-like twigs. Except upon the banks of nullahs—"rivers" that are not rivers—the trees, as in Ugogo, wanting nutriment, never afford timber, and even the calabash appears stunted. The trackless waste of scrub, called the bush in Eastern Africa, is found in places alternating with thin gum forest; the change may be accounted for by the different depths of water below the level of the ground. It is a hardy vegetation of mimosas and gums mixed with evergreen succulent plants, cactaceæ, aloes, and euphorbias: the grass, sometimes tufty, at other times equally spread, is hard and stiff; when green it feeds cattle, and when dry it is burned in places by passing caravans to promote the growth of another crop.

The groundwork of Mgunda Mk'halí is a detritus of yellowish quartz, in places white with powdered felspar, and, where vegetation decays, brown-black with humus. Water-worn pebbles are sprinkled over the earth, and the vicinity of fiumaras abounds in a coarse and modern sandstone conglomerate. Upon the rolling surface, and towering high above the tallest trees, are based the huge granitic and syenitic outcrops before described. The contrast between the masses and the dwarf rises which support them at once attracts the eye. Here and there the long waves that diversify the land appear in the far distance like blue lines bounding the nearer superficies of brown or green. Throughout this rolling table-land the watershed is to the south. In rare places the rains stagnate in shallow pools, which become systems of mud-cakes during the drought. Water is often un procurable in the fiumaras, causing unaccustomed hardships to caravans, and death to those beasts which, like the elephant, cannot long exist without drinking.

The traveller emerging from the cultivation of Mdaburu plunges at once into Mgunda Mk'halí, which appears in its worst phase. The path is narrow and tortuous; the view is everywhere limited by a thick monotonous growth of thorny jungle, with thin hard grass rising from a glaring white and rolling ground. During the driest season no water is found for a distance of 25 miles. After the rains there are several little pits and muddy stagnant pools, which have percolated through the dark soil owing to the southerly slope of the country. After a march of 6 h. 30 m.—it is generally divided by an interval of rest at midday,—caravans halt near the bed of a shallow watercourse, where the pure element is found in sandpits about 5 feet deep.

The second stage, which occupies about six hours, terminates at

the large Mabunguru Fiumara. It traverses a forest where granite rocks of remarkable size protrude from the soil, some castellated, others in sheets and hogsbacks half a mile long. The Mabunguru is a deep and tortuous gash of fine yellow quartzose sand and sunburnt blocks of syenite; it must at times roll down an impassable torrent, and during the severest droughts it retains long pools of infiltrated rain-water green with weeds and abounding with shell-fish and the usual description of silurus.

On the third day the caravan, after a march of seven hours, reaches the middle station, Jiwe lá Mkoá, the "Round Rock." The track, crossing the Mabunguru, passes over rolling ground through a thorny jungle which gradually thins out into a forest: towards the end of the march it leaves on the left a fantastic mass of cactus-clad boulders, and, crossing a low ridge, finds at its base a single tembe or square hamlet of emigrant Wakimbu. The little basin beyond it displays, by "black jacks" and dying tree-trunks, evidences of modern industry: it is bounded on one side by the "Jiwe" which gives it a name. The "Round Rock" is the largest of the many dome-shaped outcrops of sunburnt syenite which characterise the country. It measures about 2 miles in extreme diameter, and rises by gentle slopes to the height of 200 or 300 feet. In places it is overgrown with tufty grass based upon a black dust of humus and detritus; the smoothed and rounded surfaces display deep hoof-shaped holes, which in a Moslem country would at once be determined to the Asr or dents of Duldul or Zu'l Jenah. Tolerable water is found in pits upon a swamp at the southern base, and well-covered mtego or elephant traps have here proved dangerous to heedless travellers.

The single little village of Jiwe lá Mkoá affords a few fowls and skinfuls of grain, but the people decline to part with their cattle. Large caravans often send for provisions, grain, and cattle to Jiwe lá Singa—"the Rock of soft Grass"—and to its neighbour Kipera, two small settlements of Wakimbu, Wasúngwá, and Wákonongo,* on the south-west or left (?) of the road leading to Unyamwezi, and distant one day's march from Jiwe lá Mkoá. By wasting time in hard bargaining, 100 men may be supplied with half-rations for three days at an expense of fourteen or fifteen cloths.

The neck of the desert is now broken: the western portion of Mgunda Mk'hali has already thinned out. An open forest of tall trees, with here and there a break, runs along a flat country to another clearing like Jiwe lá Mkoá, which is reached in three hours. Kirurumo consists of several small new tembe inhabited by Wakimbu, who supply caravans at an exorbitant rate. The

* This tribe, originally from Nguru, south of Unyamwezi, is again mentioned in Chap. XI.

blackness of the ground and the bright green of the vegetation here evidence the proximity of water. The potable element is found in pits sunk in a narrow nullah running northwards across the clearing; it is muddy, but sweet and abundant.

From Kirurumo the road leads through a thin forest of thorns and gums, which, bare of bush and underwood, affords a broader path and easy pleasant travelling. Traces of elephant and rhinoceros, giraffe and antelope, everywhere strike the eye; and, as usual in these places, the cattle are tormented by a venomous Tsetse. Many of the trees are barked to form encampments, and others have fallen prostrate, apparently felled by the white ants. After 4 h. 30 m. the caravan reaches a new settlement, in the district of Uyanzi, called Jiweni—"Near the Stones"—from the blocks and boulders scattered around pits of good water sunk about 3 feet in the earth. The Mongo nullah, a deep surface-drain, bisects this clearing; water appears close to the surface, and shallow pits sunk near the settlements afford plentiful supplies.

A march of 2 h. 20 m. leads from Jiweni to Mgongo Thembo through a flat country, where the fine forest is somewhat deformed by bush and brake, which in places narrow the path to a mere goat-track. The "Elephant's Back," a name suggested by the shape, is a long broken ridge of granite, bearing a scanty growth of tree and shrub, and wearing the appearance of a hill as it rises above the encircling level. Numerous "black-jacks" and felled stumps, many of them pollarded, still cumber the fields, proving the settlement to be of modern date: it is, however, more extensive and better cultivated than any of its neighbours, except Mdaruru. Water being abundant and near the surface, Mgongo Thembo supports an increasing population of mixed Wakimbu and Wátátu, who dwell in large, substantial tembe, and make a livelihood by selling the surplus of their grain and fowls to travellers. They do not, like the eastern Wakimbu, refuse entrance to their villages, but they receive the stranger with the usual niggard hospitality of the "slave-path," and, African-like, they think only of what is to be gained. As at Jiwe lá Mkoa, cattle thrive near the "Elephant's Back," but the price is exorbitant, and milk is rarely procurable.

After a march of 7 h. over a rolling country—over soil now yellow with argile, then white with felspar, then black-brown with humus, through bush and forest, here opening out, there densely closing in, the caravan arrives at the "Tura Nullah," the deepest of the many surface-drains winding tortuously to the south-west. Its sole displays quartzose sand, with scatters of granite, and boulders of coarse sandstone, burnt almost to blackness, and based upon a blueish clay. A furious stream flows during the rainy seasons: links or chains of pools appear when the flood ceases, and in the

depth of winter it is bone-dry, though a scanty supply may generally be obtained by digging deep pits below the banks at the re-entering angles, on the side to which the stream swings. The trees which crowd the margin are of the noblest proportions, and the tall thick grass gives rise, when thoroughly sun-dried, to extensive conflagrations. This "Tura Nullah," which has many influents similar in their accidents, arises, according to the Arabs, in Utaturu, probably a highland region, and, running from north-east to south-west, traverses the western edge of the "Fiery Field," and feeds the Rwaha River. The road winds along its course for some miles, and if water be not procurable at the usual station, it is generally to be found at a short distance beyond.

From the "Tura Nullah" a march of 5 h. 30 m., the first half over a flat country, through close thorn and sparse forest; the second, in a clearing studded with large stockaded villages, peering over tall hedges of milk-bush, and fields of maize and millet, manioc, gourds, and water-melons, whilst numerous herds cluster around the shallow pits, whose approaches of dark soil evidence water, conducts the caravan to the Tura district. This is usually assumed to be the western frontier of Unyamwezi. Here, according to the immemorial custom of Unyamwezi, the caravan, without awaiting an invitation, enters the nearest village, unloads, and applies to the chief for shelter. There are kraals of good thatch-work scattered over the country for the convenience of travellers; but they are chiefly used by down-caravans, who are unwilling to risk their ivory in the settlements.

"Tura," variously pronounced Tula and Itula,* means "put down" (*i. e.* your burden). The traveller, whether from the east or from the west, will inevitably be delayed 4 or 5 days at this border settlement. Emerging from the gloomy and monotonous Mgunda Mk'hali, he suddenly exchanges broom jungles, forest, and huge granite boulders for a fair champaign, bounded on either hand by low, rolling, and rounded hills of primitive formation. Tura is situated in s. lat. $5^{\circ} 2'$, and e. long. $33^{\circ} 57'$, and the country rises to 4000 feet above sea-level.

The superiority of climate, and probably the absence of that luxuriant vegetation which distinguishes the eastern region, have proved favourable to the physical development of the races living in and about Ugogo. The Wagogo, and their northern neighbours the Wahumba, are at once distinguishable from the wretched population of the alluvial valleys, and of the mountains of Usagara; though living in lower altitudes, they are a fairer race, and there-

* The Wanyamwezi generally pronounced it Tálá—Tálá hápá would mean "put down here." Itula, in Kinyanwezi, is probably a locative form, like the Arabic Mahattah, meaning "the place of putting down." The Arabs and Wasawahili call the district Tura.

fore show better blood, than the Wanyamwezi. These two tribes, whose distinctness is established by difference of dialect, will be described in order.

The Wagogo extend from the landward base of Usagara in direct distance to Mdaburu a 5-days' march : on the north they are bounded by the Wátátu, on the south by the Wabena tribes ; the breadth of their country is computed at about 8 stages. In the north, however, they are mingled with the Wahumba, in the south-east with the Wahehe, and in the south with the Warori.

The Wagogo display the variety of complexion usually seen amongst slave-purchasing races : many of them are fair as Abyssinians ; some are black as negroes. In the eastern and northern settlements they are a fine, stout, and light-complexioned race. Their main peculiarity is the smallness of the cranium compared with the broad circumference of the face at and below the zygomata : seen from behind the appearance is that of a small half-bowl fitted upon one of considerably larger bias ; and this, with the widely-projecting ears, gives a remarkable expression to the face. Nowhere else in Eastern Africa is the lobe so distended. Pieces of cane an inch or two in length, and nearly double the girth of a man's finger, are so disposed that they appear like handles to the owner's head. The distinctive mark of the tribe is the absence of the lower incisors ; but they are more generally recognised by their ears. There is no regular tattoo, though some of the fair have two parallel lines running from below the bosom down the abdomen, and the men often extract a single lower incisor. The hair is sometimes shaved clean, in others grown in mop-shape : more generally it is dressed in a mass of tresses, as amongst the ancient Egyptians, and the skin, as well as the large bunch of corkscrews, freely stained with ochre and micaceous earths, drips with ghee, the pride of rank and beauty. The Wagogo are not an uncomely race : some of the younger women might even lay claim to prettiness. The upper part of the face is often fine, but the lips are ever thick, and the mouth is coarse ; similarly the body is well formed to the haunches, but the calf is lean, and placed peculiarly high up the leg. The expression of the countenance, even in the women, is wild and angry ; and the round eyes are often reddened and bleared by drink. The voice is strong, strident, and commanding. Both sexes are circumcised, the object of the rite being probably to avoid certain inconveniences common amongst the Wangindo, near Kilwa, and the Wamakonde of Ngao (Monghou).

Their superiority of clothing gives the Wagogo an aspect of civilization. Even the children are generally dressed. The attire of the men is usually some Arab check or dyed Indian cotton : many also wear sandals of single hide. Married women are clothed in cottons when wealthy, and in skins when poor. The dress

of the maidens under puberty is the languti of Hindostan, a kind of T-bandage, with the front ends depending below the knees ; it is supported by a single or double string of the large blue glass beads called Sungomaji. The ornaments of both sexes are kitindi, and bracelets and anklets of thick iron and brass wires, necklaces of brass chains, disks and armlets of ivory, and bands of hide-strip with long hair, bound round the wrists, above the elbows, and below the knees. As usual the males appear armed. Some import from Unyamwezi and the westward regions the long double-edged knife called sime. It is a "serviceable dudgeon" used in combat or in peaceful avocations, like the snick-an-snee of the ancient Dutch. Shields are unknown. The bow is long : the handle and the horns are ornamented with plates of tin and zinc, and the string is whipped round the extremities for strength. The spear resembles that used by the Wanyamwezi in the elephant-hunt : it is about 4 feet long, and the head is connected with a stout wooden handle by an iron neck measuring half the length of the weapon. In eastern Ugogo, where the Masai are near, the Wagogo have adopted their huge shovel-headed spears, and daggers like those of the Somal. It is the fashion for men to appear in public with the peculiar bill-hook used in Usagara ; and in the fields the women work with the large hoe of Unyamwezi.

The villages of the Wagogo are square tembe, low and mean-looking for want of timber. The outer walls are thin poles, planted in the ground and puddled with mud. The huts, partitioned off like ships' cabins, are exceedingly dirty, being shared by the domestic animals, dogs, and goats. They are scantily furnished with a small stool, a cot of cow's hide stretched to a small framework upon little uprights, a mortar for grain, and sundry gourds and bark corn-bins. At sunset all the population retires, and the doors are carefully barricaded for fear of the plundering Wahumba. At night it is dangerous to approach the villages.

The language of Ugogo is harsher than the dialects spoken by their eastern and western neighbours. In the eastern parts the people understand the Masai tongue. Many can converse fluently in the Kisawahili. The people, however, despise all strangers except the Warori and the Wahumba, and distinguish the Wanyamwezi by the name of Wakonongo, which they also apply to travellers in general. Within the memory of man one Kafuko, of Unyamwezi, a great merchant, and a Mtongi or caravan leader, when traversing Ugogo with some thousands of followers, became involved in a quarrel about paying for water. After fifteen days of skirmishing the leader was slain and the party was dispersed. The effect on both tribes has lasted to the

present day. After the death of Kafuko no rain fell for some years—a phenomenon attributed by the Wagogo to his powers of magic ;—and the land was almost depopulated. The Wanyamwezi, on the other hand, have never from that time crossed the country without fear and trembling. In several wars between the two tribes the Wagogo have generally proved themselves the better men. This superiority has produced a brawling and bullying manner. They call themselves Wáná Wádege, or sons of birds—that is to say, “semper parati.” The Wanyamwezi studiously avoid offending them; and the porters will obey the command of a boy rather than risk an encounter. “He is a Mgogo,” said before the bully’s face, makes him feel himself forty times a man; yet he will fly in terror before one of the Warori or the Wahumba.

The strength of the Wagogo lies in their numbers. As the people seldom travel to the coast, their villages are full of fighting men. Moreover, the uchawi or black magic here numbers few believers, consequently those drones of the social hive, the Waganga, or medicine-men, are not numerous. The Wagogo seldom sell their children and relations, yet there is no order against the practice. They barter for slaves their salt and ivory, the principal produce of the country. No caravan ever passes through the country without investing capital in the salt-bitter substance which is gathered in flakes from the dried mud upon the surface of the mbuga, or swampy hollows. It is washed to clear it of dirt, boiled till it crystallizes, made up into cones about half a foot in length, and sold at a high premium after a few days’ march. Elephants are numerous in the country: every forest is filled with deep traps, and during droughty seasons many are found dead in the jungle. The country is divided into districts; the tusks become the property of the Sultan within whose boundaries the animal falls, and the meat is divided amongst the subjects. Ivory is bartered for slaves: this practice gives to caravans a hold upon the people, who, having an active commerce with the coast, cannot afford to be shut out from it. No caravan ever passes through Ugogo without leaving some of its live stock—the principal want of the listless and indolent cultivator. The wild slaves of the interior, wayworn and fond of change as English sailors, are persuaded by a word to desert; they take the first opportunity of slipping away from their patrons, generally robbing a weapon and a little cloth or rations for immediate use. Their new masters send them off the road lest they should be recognised and claimed: after a time a large hoe is placed in their hands, and the fools feel, when too late, that they have exchanged an easy for a hard life. The Wagogo sell their tribe-men only for uchawi—magic; and this superstition has not amongst them the fearful prevalence which it obtains in other lands: sometimes parents, when in distress, part with their children. The same is the case amongst their north-

ern neighbours, the Wamasai, the Wahumba, and the Wakwafi. These slaves are rarely in the market, and, though remarkable for strength and intelligence, they are little prized, in consequence of their obstinate and untameable character. Many of them would rather die under the stick than level themselves with women by using a hoe.

The Wagogo are celebrated as thieves who will, like the Wahehe, rob even during the day. They are importunate beggars, who specify their long list of wants without stint or shame. The men are idle and debauched, spending their days in unbroken crapulence and drunkenness, whilst the girls and women hoe the fields and the boys tend the flocks and herds. They mix honey with their pombe, or beer, and each man provides entertainment for his neighbours in turn. After midday it would be difficult throughout the country to find a chief without the thick voice, the fiery eyes, and the moidered manners, which prove that he is either drinking or drunk.

The Arabs declaim against the Wagogo as a rude and boisterous, a violent and extortionate race. They have certainly no idea of politeness : they flock into a stranger's tent, squat before him, staring till their curiosity is satisfied, and quiz his peculiarities unmercifully. Upon the road a mob of both sexes will press and follow a caravan for miles. The women, carrying their babes in leopard-skins bound behind the back and with unveiled bosoms, break into an ungraceful long trot, fiercely shouting with the excitement of delight, and the girls laugh and deride the stranger as impudently as boys would in more modest lands. Yet this curiosity argues to a certain extent improbability ; the most degraded tribes are too apathetic to be roused by strange sights. Moreover, the Wagogo are not deficient in rude hospitality. A stranger is always greeted with the Yambo-salutation.* He is not driven from the doors, as amongst the Wazaramo and Wasagara ; he is readily taken into brotherhood. The host places the stool for his guests, seating himself on the ground : he prepares a meal of milk and porridge, and on parting presents, if he can afford it, a goat or a cow. The African fundi or fattori of caravans are rarely sober in Ugogo. The women are well disposed towards strangers of fair complexion, apparently with the permission of their husbands. According to the Arabs, the lover of the daughter is also *de jure* the lover of her mother.

* Yambo, with the peculiar African *y*, literally meaning "the state," is used interrogatively, like the Arab *kayf halāk?* or the English "how are you?" throughout the island and coast of Zanzibar. The salutation has extended to the travelled barbarians of the interior. The usual reply is *Yámbo síná*--"the state is very" (well)--or *siyámbo*, *huyambo síná*, which signifies the same thing, and the counter reply is either *Siyámbo*, or amongst Arabs *Marhábé*, "may you be well!"

The Sultan amongst the Wagogo is called Mtemi, a high title. He exercises great authority, and is held in such esteem by his people, that a stranger daring to be called by the same name would be liable to chastisement. The ministers, who are generally brothers or blood-relations, are known as Wázágira (in the singular Mzágirá), and the councillors, who are the elders and the honourables of the tribe, take the Kinyamwezi title "Wányápárá," or "Wányáp'hárá." The Wagogo, when intimate with strangers, readily take the opportunity of blaming their rulers for rapacity and violence.

The necessities of life are dear in Ugogo. The people will rarely barter their sheep, goats, and cows for plain white or blue cottons, and even in exchange for milk they demand pink, coral or blue glass beads. A moderate-sized caravan will expend from 6 to 10 shukkah per diem. The Wanyamwezi travelling parties live by their old iron hoes, for which grain is given by the people, who hold the metal in request. Some of the chiefs have a few asses; but they do not readily part with them.

The Wahumba, by some called Wahumpa, is one of the terrible pastoral nations "beyond the rivers of Æthiopia." To judge from their dialect they are, like the Wakwafi, a tribe or subtribe of the great Masai race, who speak a language partly South-African and partly Semitico-African, like that of the Gallas, and of the Somal.* The habitat of the Wahumba extends from the north of Usagara to the eastern shores of the Nyanza or Ukerewe Lake; it has been remarked that a branch of the Mukondokwa River rises in their mountains. The blue highlands occupied by this pastoral race are clearly visible on the right hand to the traveller passing from Ugogo westwards. Having but little ivory, they are seldom visited by travellers: their country, however, was explored some years ago by an Arab merchant, Hamid bin Salim, who visited it for the purpose of buying asses. He set out from Tura, in eastern Unyamwezi, and, traversing the country of the wild Watatíru, arrived on the eighth day at the frontier district Iramba, where there is a river which separates the tribes.† He was received with civility; but none have followed his example.

* A vocabulary of the Kimasai was published by the Rev. Wm. Krapf, at Tubingen, in 1854, under the name of "Engutuk Eloikob," or the Wakwafi dialect. A somewhat superior performance is the "Vocabulary of the Enguduk Iloigob, as spoken by the Masai tribes in East Africa," compiled by the Rev. J. Erhardt, missionary in the service of the Church Missionary Society, edited by Dr. Krapf, and printed by Ferdinand Richen, at Ludwigsburg, in Würtemberg, 1857.

† Another route leads from Rubuga in eastern Unyamwezi, after five days, to Iramba, or Nyaramba, of the Wanyaramba people; thence, by three marches, it enters the country of the Watatíru, who extend from the S.E. to the N.W. up to the Nyanza Lake, and, marching three stations, it abuts upon the Wahumba tribe. The true Wamasai, who extend from Chhaga and Kilimángáo to the Nyanza, lie four marches beyond the Wahumba.

The Wahumba are a fair and comely race, with the appearance of mountaineers, long-legged and lightly made. They have repeatedly ravaged the lands of Usagara and Ugogo : in the latter country, near Usekhe, there are several settlements of this people, who have exchanged the hide-tent for the hut, and the skins for cotton-cloth. They stain their garments with ochreish earth, and their women are distinguished by double coils of brass-wire, above and below their elbows. Their ear-lobes are pierced and distended, like those of the Wagogo. In their own land they are purely pastoral ; they grow no grain, and they subsist entirely upon milk and meat. Their habitations are hemispheres of boughs roofed with a bull's-hide : they are so small that the legs of the occupant protrude beyond the shelter. Their arms, which are hung up in readiness outside the hut, are broad-headed spears of soft iron, long sime or double-edged daggers, with ribbed wooden handles fastened to the blade by a strip of bull's-tail, and rungu or knob-kerries, with double bulges in the wood as large as a man's fist, used to weight the weapon as it whirls through the air. They ignore bows and arrows ; but in battle they use the pavoise or large hide shield, which distinguishes the Kafirs of the Cape. The Arabs, when in considerable parties, do not fear their attacks.

The Wahumba practise a peculiar kind of circumcision unknown to the races around them. Like the Wakwafi, they bandage the infant's leg from the ankle to the knee, and the ligature is not removed till the child can stand upright. The object is to prevent the development of the calf, which, according to their ideas of physiology, detracts from the activity and endurance of the runner : it is certain that the Wahumba seen near Usekhe showed the muscles remarkably shrunken and the hinder projection of the leg close below the knee.

A description of the Warori, another plundering race, which has been mentioned in this chapter, will be deferred to a future page.

CHAPTER VI.

THE FOURTH REGION : THE HILLY TABLE-LAND OF UNYAMWEZI AND EASTERN UVINZA.

THE fourth division is a hilly table-land, extending from the western skirts of the desert Mgunda Mk'halii, in E. long. $33^{\circ} 57'$, to the eastern banks of the Malaragazi River, in E. long. $31^{\circ} 10'$: it thus stretches diagonally over 155 rectilinear geographical miles. Bounded on the north by Usui and the Nyanza Lake, to the south-eastwards by Ugara, southwards by Úkimbu, and south-westwards by Uwende, it has a depth of from 25 to 30 marches. The maximum altitude observed by B. P. therm. was 4050 feet,

the minimum 2850. This zone contains the two great divisions of Unyamwezi and Uvinza.

The name "Unyamwezi" was first heard by the Portuguese, according to Giovanni Botero, towards the end of the sixteenth century, or about 1589. Pigafetta,* who, in 1591, systematized the discoveries of the earlier Portuguese, placed the empire of "Mone-mugi" or Munimigi† in a vast triangular area, whose limits were Monomotapa, Congo, and Abyssinia: from his pages it appears that the people of this central kingdom were closely connected by commerce with the towns on the eastern coast of Africa. According to Dapper, the Dutch historian, 1671, whose work‡ has been the great mine of information to subsequent writers upon Africa south of the equator, about 60 days' journey from the Atlantic is the kingdom of Monemugi, which others call "Nimeamaye," a name still retained under the corrupted form "Nimeaye" in our atlases.§ M. Malte-Brun, senior,|| mentioning Monoemugi, adds, "ou, selon une autographe plus authentique, Mou-nimougi." All the Portuguese authors call the people Monemugi or Mono-emugi; Mr. Cooley prefers Monomoezi, which he derives from "Munha Munge, or lord of the world," the title of a great African king in the interior, commemorated by the historian De Barros. Mr. Macqueen ('Geography of Central Africa'), who also gives Manmoise, declares that "Mueno-muge, Mueno-muize, Monomoise, and Uniamese," relate to the same place and people, comprehending a large extent of country in the interior of Africa: he erroneously explains the word to mean the great Moises or Movisas.¶ The Rev. Mr. Erhardt asserts that for facility of pronunciation the

* 'Relatione del Reame di Congo,' p. 79. This and the following quotations are borrowed from the learned paper of Mr. W. Desborough Cooley, 'The Geography of N'yassi.'

† João dos Santos' 'History of Eastern Ethiopia,' book iii., chap. i.; Pinkerton's 'Voyages and Travels,' vol. xviii.

‡ 'Beschryvving van Africa,' Amst., pt. ii., pp. 219-285.

§ Bowditch ('Discoveries of the Portuguese,' a posthumous work, abounding in misprints, p. 134) terms the country the "kingdom of Nineanai, the sovereign of which calls himself Mano-emuyi."

|| 'Précis de Géographie,' tom. v., p. 104.

¶ Mr. Macqueen says (p. 117, *loc. cit.*), "From considerable research, and from the valuable work of Gamitto, I have ascertained the exact meaning of this word, which clears up a good deal of African geography. The prefix mono means great, lord, or master. . . . Hence Monomoises means the great Moises, or lord of the Moises or Movisas, while the Movisas or Moises which inhabit the country from the vicinity of the Arroango to near Cazembe are tribes of the same peoples."

As will appear in the sequel, the word mono is a mere mistake. In the E. African dialects mwánd, generally pronounced m'ána, means the son or the young of, as m'ána Myáhá, the son of Myáhá; and m'ána simba, the young of a lion. Mono is a mere corruption, and morena a dialectic variety. Mwene, or rather mwene, is synonymous with the Kisawahili muinyi, signifying a lord or master, and occurs in the ministerial title Mwene Goha, or chief councillor. The connection of any of these words with the name Monomoczi, a mere barbarism for Unyamwezi, arose from ignorance of the S. African languages.

coast merchants have turned the name "Wanamesi" into "Waniamesi," which also leads his readers into error. Dr. Livingstone* thus endorses the mistake of Messrs. Macqueen and Erhardt: "The names Monomoizes, spelt also Monemuigis and Monomuizes, and Monomotapistas, when applied to the tribes are exactly the same as if we should call the Scotch the Lord Douglasses . . . Monomoizes was formed from Moiza or Muiza, the singular of the word Babisa or Aiza, the proper name of a large tribe to the north." In these sentences there is a confusion between the lands of the Wanyamwezi, under the parallel of the Tanganyika Lake, and the Wabisa (in the singular Mbísá, the Wavisa of the Rev. Mr. Rebmann), a well-known commercial tribe dwelling about the Maravi or Nyassa Lake, s.w. of Kilwa, whose name in times of old was corrupted by the Portuguese to Movizas or Movisas. Finally M. Guillain, in a work already alluded to, states correctly the name of the people Oua-nyamouezi, but in giving the name of the country, "pays de Nyamouezi," he shows little knowledge of the Zangian dialects. M. V. A. Malte-Brun, junior ('Bulletin de Géographie,' Paris, 1856, Part II. p. 295) writes Wanyamwizi.

A name so discrepantly corrupted deserves some notice. Unyamwezi is translated by Dr. Krapf and the Rev. Mr. Rebmann, "Possessions of the Moon."† The initial U, the causal and locative prefix, denotes the land, nya, of,‡ and mwezi, articulated m'ezi with semi-elision of the w, means the moon.§ The people sometimes pronounce their country's name Unyamiezi, which would be a plural form, miezi signifying moons or months. The Arabs and

* Chap. xxx. Dr. Livingstone, erring by applying the forms of Sichwana or S. African grammar to the E. African branch, continually writes the plural affix bá, instead of wá, as Balunda or Balonda (the Alunda or Arunda of Mr. Cooley, more correctly called by Bowdich Waroondas) for Walonda, and Babisa for Wabisa. Thus, in chap. xxv., we find "The Arabs assured me that the powerful chiefs beyond the Cazembe on the N. E., viz. Moatatu, Moaroro, and Mogogo, chiefs of the tribes Batutu, Baroro, and Bagogo, would have no objection to my passing through their country." The tribes alluded to are the Watuta, a race of robbers living to the north of Msene, the western capital of Unyamwezi; the Wagogo are the people of Ugogo described in the last chapter; and the Baroro is probably a corruption of Maroro, not the name of a people, but a well-known province in Usagara. Moreover, the Watuta, the Wagogo, and other tribes speaking similar tongues, do not designate their chiefs by prefixing mo, as in Moatatu and Mogogo.

† Mr. Cooley ('Inner Africa Laid Open,' p. 64) ridicules this derivation as a "flagrant specimen of Mission-house jargon." He is right to say that there is no such uncomposed word as "unia," "possession," and that no two Zangian nouns can be welded together in the German fashion without a visible joint. But "unya" often occurs in the beginning of words in the dialects of the interior, as Unyanyembe, Unyanguruwe, &c. &c.; and the Arabs, though ignoring the grammatical niceties of the language, all attach to it in composition the meaning of "possession."

‡ Mr. Rebmann divides the syllable "nyá" into "ni," the substantive verb "it is," and "yá" the possessive prefix "of." This, however, is the Kisawahili form; it is probable that the prefix "yá" has been changed euphonically before "Mwezi" into "nya." The word is thus composed of three parts—U-nyá-mwezi.

§ See Chap. VIII.

the people of Zanzibar, for facility and rapidity of pronunciation, dispense with the initial dissyllable, and call the country and its race Mwezi. The correct designation of the inhabitants of Unyamwezi is, therefore, Mnyamwezi in the singular, and Wanyamwezi in the plural: Kinyamwezi is the adjectival form. It is not a little curious that the Greeks should have placed their $\tau\pi\eta\varsigma \sigma\alpha\lambda\eta\pi\eta\varsigma$ —the mountains of the moon—and the Hindus their Soma Giri* (an expression probably translated from the former), in the vicinity of the African "Land of the Moon." It is impossible to investigate the antiquity of the vernacular name; all that can be discovered is that nearly three centuries and a half ago the Portuguese explorers of Western Africa heard the country designated by its present term.

There is the evidence of barbarous tradition for a belief in the existence of Unyamwezi as a great empire, united under a single despot. The elders declare that their patriarchal ancestor became after death the first tree, and afforded shade to his children and descendants.† According to the Arabs the people still perform pilgrimage to a holy tree, and believe that the penalty of sacrilege in cutting off a twig would be visited by sudden and mysterious death. All agree in relating that during the olden time Unyamwezi was united under a single sovereign, whose tribe was the Wakalaganza, still inhabiting the western district, Usagozi. According to the people, whose greatest chronological measure is a Masika, or rainy season,‡ in the days of the grandfathers of their grandfathers the last of the Wanyamwezi emperors died. His children and nobles divided and dismembered his dominions, further partitions ensued, and finally the old empire fell into the hands of a rabble of petty chiefs. This wild computation would point to an epoch of 150 years—a date by no means improbable.

These glimmerings of light thrown by African tradition illus-

* "Mwezi," the "moon," is also used as a proper name by individuals: thus, in 1858, the chief of Urundi was so called. Unyainwezi may therefore also signify the "possessions of Mwezi." Mr. Cooley ('Inner Africa Laid Open,' p. 54, note) wrongly opines that the name of the moon is written "mézi," not "moezi."

† Similarly, the Damarae of S. Africa, according to Mr. Andersson (chap. xviii.), believe men and beasts to have first sprung from a parent "iron-tree," and in burial turn the corpse's face northwards, in memory of their original homes. The Gallas have a similar superstition concerning the tree called Wodanabe, their old place of idolatry, and the tradition has descended to their offshoots, the Moslem Somal and the Shillucks of the White Nile: according to Selim Bimbashi ('Premier Voyage à la Recherche des Sources du Nil Blanc'), "Ils font la prière devant un arbre entouré de roseaux, auquel on suspend des peaux avec des plumes," p. 21. The same is repeated by M. D'Arnaud, who accompanied this first Expedition: he calls the tree "niécama."

‡ In Unyamwezi the year begins with the masika, when grass grows, and ends when the holcus dries in its bins. The people do not reckon by moons, although a single moon with them serves the purpose of a short date, like our month. Weeks and holy days are utterly unknown; and the hour is guessed by pointing out the position of the sun.

trate the accounts given by the early Portuguese concerning the extent and the civilization of the Unyamwezi empire. Moreover, African travellers in the seventeenth century concur in asserting that, between 250 and 300 years ago, there was an outpouring of the barbarians from the heart of Ethiopia and from the shores of the Central Lake towards the eastern and southern coasts of the peninsula, a general waving and wandering of tribes which caused ethnical and geographical confusion, public demoralization, dismemberment of races, and change, confusion, and corruption of tongues. About this period it is supposed the kingdom of Mtándá, the first Kazembe, was established. The Kafirs of the Cape, who are clearly an equatorial people, date their migration from the northern regions to the banks of the Kei about one century and a half ago.

In these days Unyamwezi has returned to the political state of Eastern Africa in the time of the *Periplus*. It is broken up into petty divisions, each ruled by its own tyrant; his authority never extends beyond five marches; moreover, the minor chiefs of the different districts are virtually independent of their suzerains. One language is spoken throughout the Land of the Moon, but the dialectic differences are such that the tribes in the east with difficulty understand their brethren in the west. The principal provinces are—Usukuma to the extreme north, Utakama on the south,* Unyanyembe in the centre, Ufyoma and Utumbara in the north-west, Unyangwira in the south-east, Usagozi and Usumbwa to the westward. The general character of Unyamwezi is rolling ground, intersected with low conical and tabular hills, whose lines ramify in all directions. The superjacent stratum is clay, overlying the sandstone based upon various granites, which in some places crop out, picturesquely disposed in blocks and boulders, in huge domes and lumpy masses; ironstone is met with at a depth varying from 5 to 12 feet, and at Kazeh, the Arab settlement in Unyanyembe, bits of coarse ore were found by digging not more than 4 feet in chance spots. No mountain is found in the country. During the rains a coat of many-tinted greens conceals the soil; in the dry season the land is grey, lighted up by golden stubbles and dotted with wind-distorted trees, with shallow swamps of emerald grass, and with wide sheets of dark mud. Dwarfed stumps and charred “black-jacks” deform the fields, which are sometimes ditched or hedged in, whilst a thin forest of parachute-shaped thorns diversifies the waves of rolling land and the earth-hills spotted with sun-burnt stone. The reclaimed tracts and clearings are divided from one another by strips of primeval jungle, varying

* In Kinyamwezi *sukuma* means the north, *takama* the south, *kiya* the east, and *mwere* the west.

from 2 to 12 miles in length. As in most parts of Eastern Africa, the country is dotted with "fairy mounts"—dwarf mounds, the ancient sites of trees now crumbled to dust and the débris of insect architecture; they appear to be rich ground, as they are always diligently cultivated. The yield of the soil, according to the Arabs, averages sixty-fold, even in unfavourable seasons.*

The Land of the Moon,—the garden of Central Intertropical Africa,—presents an aspect of peaceful rural beauty which soothes the eye like a medicine after the red glare of barren Ugogo and the dark monotonous verdure of the western provinces. The inhabitants are comparatively numerous in the villages, which rising at short intervals above impervious walls of lustrous milk-bush, variegate the well-ridged plains; whilst in the pasture lands frequent herds of many-coloured cattle, plump, round-barrelled, and high-humped, like the Indian breeds, and mingled flocks of goats and sheep dispersed over the landscape, suggest ideas of barbarous comfort and plenty. There are few scenes more soft and soothing than a view of Unyamwezi in the balmy evenings of spring. As the large yellow sun nears the horizon, a deep stillness falls upon earth: even the zephyr seems to lose the power of rustling the lightest leaf. The milky haze of midday disappears from the firmament, the flush of departing day clothes the distant features of scenery with a robe of gorgeous rose-tint, and the twilight is an orange glow that burns like distant fires, passing through an imperceptibly graduated scale of colours—saffron, yellow, tender green, and the lightest azure—into the dark blue of the infinite space above. The charm of the hour seems to affect even the unimaginative Africans, as they sit in the central spaces of their villages, or stretched under the forest-trees, gazing upon the glories around.

In Unyamwezi water generally lies upon the surface, during the rains, in broad shallow pools, which become favoured sites for rice-fields. These little ziwa and mbuga—ponds and marshes—vary from 2 to 5 feet below the level of the land; in the dry season they are betrayed from afar by a leek-green line of livelier vegetation streaking the dead tawny plain. The Arabs seldom dig their wells deeper than 6 feet, and they complain of the want of "live water" gushing from the rocky ground, as in their native Oman. The country contains few springs, and the surface of retentive clay prevents the moisture penetrating to the subsoil. The peculiarity of the produce is its decided chalybeate flavour. The versant of the country varies. The eastern third, falling to

* The Arabs give the following scale of production:—Beans and fine rice, 60-fold; red rice, holcus, maize, and millet, 120-fold; phaseoli and ground-nuts, 80-fold. The Boors of the Cape reap, it is said, only from 10 to 15 for 1 in the more sterile, and from 30 to 40 for 1 in the most fertile lands.

the south-east, discharges its surplus supplies through the *Rwaha* river into the Indian Ocean; in the centre, water seems to stagnate; and in the western third, the flow, turning to the north and north-west, is carried by the *Gombe* nullah—a string of pools during the dry season, and a rapid unfordable stream during the rains—into the *Malagarazi* river, the principal eastern influent of the *Tanganyika* lake. The levels of the country and the direction of the waters combine to prove that the great depression of Central Africa commences in the district of *Kigwa*.

The climate of the island and coast of Zanzibar has, it must be remembered, double seasons, which are exceedingly confused and irregular. The lands of *Unyamwezi* and *Uvinza*, on the other hand, are remarkable for simplicity of division. There eight seasons disturb the idea of year; here are but two—a summer and a winter. In 1857 the *masika*, or rains, commenced throughout Central *Unyamwezi* on the 14th of November. In the northern and western provinces the wet monsoon begins earlier and lasts longer. At *Msene* it precedes *Unyanyembe* about a month; in *Ujiji*, *Karagwah*, and *Uganda*, nearly two months. Thus the latter countries have a rainy season which lasts from the middle of September till the middle of May.

The moisture-bearing wind in this part of Africa is the fixed south-east trade, deflected, as in the great valley of the Mississippi and in the island of Ceylon, into a periodical south-west monsoon. As will appear in these pages, the downfalls begin earlier in Central Africa than upon the eastern coast, and from the latter point they travel by slow degrees, with the northing sun, to the north-east, till they find a grave upon the rocky slopes of the Himalayas.

The rainy monsoon in Central Africa is ushered in, accompanied, and terminated by thunder-storms, and by occasional hail-falls. The blinding flashes of white, yellow, or rose-coloured lightning play over the firmament uninterruptedly for hours, during which darkness is rarely visible. In the more violent discharges 30 and 35 flashes may be counted in a minute, and so vivid is the light that it discloses the finest shades of colour, and appears followed by a thick and palpable gloom, such as would hang before a blind man's eyes. A deafening roar, simultaneously following the flash, appears to travel, as it were, to and fro overhead: several claps will sometimes sound almost at the same moment and as if coming from different directions, and the same storm will, after the loudest outburst, pass over, and be immediately followed by a second, showing the superabundance of electricity in the atmosphere. When hail is about to fall, a rushing noise is heard in the air, with a sudden coolness and a strange darkness from the canopy of brownish purple clouds. The winds are exceedingly variable: perhaps they are most often from the east and north-east

during summer, from the north-west and the south-west in the rains; but they are answered from all quarters of the heavens, and the most violent storms sail up against the lower atmospheric currents. The Portuguese of the Mozambique* attribute these terrible discharges of electricity to the quantity of mineral substances scattered about the country; but a steaming land like Eastern Africa wants during the rains no stronger battery. In the rainy season the sensation is that experienced throughout the equinoctial gales in the Mediterranean, where the scirocco diffuses everywhere discomfort and disease. The fall is not, as in Western India, a steady downpour, lasting sometimes two and three days without a break. In Central Africa rain seldom endures beyond 12 hours, and it often assumes for weeks an appearance of regularity, re-occurring at a certain time. Night is its normal season. The mornings are often wet, and the midday is generally dry. As in Southern Africa, a considerable decrease of temperature is the consequence of long-continued rain. Westward of Unyanyembe, hailstorms, during the rainy monsoon, are frequent and violent; according to the Arabs, the stones sometimes equal pigeons' eggs in size. During this monsoon the sun burns with sickly depressing rays, which make earth reek like a garment hung out to dry. Yet this is not considered the unhealthy period: the inundation is too deep, and evaporation is yet unable to extract poison from decay.

As in India and the southern regions of Africa, the deadly season follows the wet monsoon from the middle of May till the end of June. The kosi or south-west wind gives place to the kaskazi, or north-east, about April, a little later than at Zanzibar. The cold gales and the fervid suns then affect the outspread waters; the rivers, having swollen during the weeks of violent downfall that usher in the end of the rains, begin to shrink, and miry morasses and swamps of black vegetable mud line the low lands whose central depths are still under water. The winds, cooled by excessive evaporation and set in motion by the heat, howl over the country by night and day, dispersing through the population colds and catarrhs, agues and rheumatisms, dysenteries and deadly fevers. It must, however, be remarked that many cases which in India and Sindh would be despaired of, survived in Eastern Africa.

The hot season, or summer, forms the complement of the year, lasting from the end of June till nearly the middle of November. The air now becomes healthy and temperate; the cold, raw winds rarely blow, and the people recover from their transition diseases. At long intervals, during these months, but a few grateful and

* Salt's 'Voyage to Abyssinia,' chap. ii.

refreshing showers, accompanied by low thunderings, cool the air and give life to the earth. These phenomena are expected after the change of the moon, and not, as in Zanzibar, during her last quarter.* The Arabs declare that here, as in the island, rain sometimes falls from a clear sky—a phenomenon not unknown to African travellers. The drought affects the country severely,—a curious exception to the rule in the zone of perpetual rain ;—and after August whirlwinds of dust become frequent. At this time the climate is most agreeable to the senses ; even in the hottest nights a blanket is welcome, especially about dawn, and it is possible to dine at 3 or 4 P.M., when in India the exertion would be impracticable. During the day a ring-cloud, or a screen of vapour, almost invariably tempers the solar rays ; at night a halo, or a corona, generally encircles the moon. The clouds are chiefly cumulus, cumulo-stratus, and nimbus ; the sky is often overcast with large white masses floating, apparently without motion, upon the milky haze, and in the serenest weather a few threads are seen pencilled upon the expanse above. Sunrise is seldom thoroughly clear, and, when so, the clouds, sublimed in other regions and brought up by the rising winds, begin to gather in the forenoon. They are melted, as it were, by the fervent heat of the sun between noon and 3 P.M., at which time also the breezes fall light. Thick mists collect about sunset, and by night the skies are seldom free from clouds. The want of heat to dilate the atmosphere at this season, and the light-absorbing vegetation which clothes the land, cause a peculiar dimness in the Galaxy and "Magellan's Clouds." The twilight also is short, and the zodiacal light was not observed. The suffocating sensation of the tropics is unknown, and at noon in the month of September—the midsummer of this region—the thermometer, defended from the wind, in a single-fold Arab tent, never exceeded 113° Fahr. Except during the rains, the dews are not heavy, as in Zanzibar, in the alluvial valleys, and in Usagara and Ujiji : the people do not fear exposure to them, though, as in parts of France, they consider dew-wetted grass unwholesome for cattle. The Arabs stand bathing in the occasional torrents of rain without the least apprehension. The temperature varies too little for the European constitution, which requires a winter. The people, however, scarcely care to clothe themselves. The flies and mosquitoes—those pests of most African countries—are here a minor annoyance.

The principal cause of disease during the summer of Unyam-

* In the Cape latitudes, according to our earlier travellers, showers seldom fall except at the changes of the moon, a circumstance of which the rain-makers, from observation, are aware.

wezi is the east wind,* which, refrigerated by the damp alluvial valleys of the first region and by the tree-clad peaks and swampy plains of Usagara, sweeps the country, like the tramontanas of Italy, with a freezing cold in the midst of a tepid atmosphere. These unnatural combinations of extremes, causing sudden chills when the skin perspires, bring on inevitable disease; strangers often suffer severely, and the influenza is as much feared in Unyamwezi as in England. The east wind is even more dangerous in the hut than in the field: draughts from the four quarters play upon the patient, making one side of the body tremble with cold, whilst the other, defended by the wall or heated by the fire, burns with fever-heat. The gales are most violent immediately after the cessation of the rains; about the beginning of August they become warmer and fall light. At this time frequent whirlwinds sweep from the sun-parched land clouds of a fine and penetrating clay-dust, and slight shocks of earthquakes are by no means uncommon.† After September, though the land still suffers from drought, the trees begin to put forth their leaves; it is the coupling season of beasts, and the period of nidification and incubation for birds.‡ As all sudden changes from siccity to humidity are prejudicial to man, there is invariably severe disease at the end of the summer, when the rains set in.

Travellers from Unyamwezi homeward returned often represent that country to be the healthiest in Eastern and Central Africa: they quote, as a proof, the keenness of their appetites and the quantity of food which they consume. The older residents, however, modify their opinions: they declare that digestion does not wait upon appetite,§ and that, as in Egypt, Mazanderan, Malabar, and other hot damp countries, no man long retains rude health. The sequelæ of their maladies are always severe; few care to use remedies, deeming them inefficacious against morbid influences unknown to them; convalescence is protracted, painful, and uncertain, and at length they are compelled to lead the lives of confirmed invalids. The gifts of the climate, lassitude and indolence,

* In the south, Dr. Livingstone complains of the cold east winds prevalent at Linyanti, which, passing over the wide plains inundated by the Chobe River, are loaded with malaria.

† Three slight shocks were observed by the Expedition—at noon on the 14th of June, 1858; on the morning of the 13th of June; and at 5 p.m. on the 22nd of November, 1858. The motion, though mild, was distinctly perceptible; unfortunately, means of ascertaining the direction were wanted. The people of the country call this phenomenon "tetemeka," or the trembling; and the Arabs remember a shock of a serious nature which took place at Unyanyembe in the hot season of 1852.

‡ Cattle begin breeding in September and October before, and throw their young after, the rainy monsoon. Birds incubate in September, before the wet monsoon.

§ According to the Arabs, rice is not digested before the fourth or fifth hour.

according to them predispose to corpulence; and the regular warmth thins the beard and induces baldness, thus assimilating strangers in body as in mind to the aborigines. They are unanimous in quoting a curious effect of climate, which they attribute to a corruption of the "humours and juices of the body." Men who after a lengthened sojourn in these regions return to Oman, throw away the surplus provisions brought from the African coast, burn their clothes and bedding, and for the first two or three months eschew society; a peculiar effluvium rendering them, it is said, offensive to the finer olfactories of their compatriots.

The mukunguru of Unyanwezi is perhaps the severest seasoning fever in this part of Africa. It is a bilious remittent, which normally lasts three days; it wonderfully reduces the patient in that short period, and in severe cases the quotidian is followed by a long attack of a tertian type. The consequences are severe and lasting even in men of the strongest nervous diathesis; burning and painful eyes, hot palms and soles, a recurrence of shivering and flushing fits, with the extremities now icy cold, then painfully hot and swollen, indigestion, insomnolency, cutaneous eruptions and fevers, languor, dejection, with all the inconveniences resulting from torpidity of liver, or from an inordinate secretion of bile, betray the poison deep lurking in the system. In certain cases this fever works speedily; some, becoming at once delirious, die on the first or the second day, and there is invariably an exacerbation of symptoms before the bilious remittent passes away.

The fauna of Unyanwezi are similar to those described in Usagara and Ugogo. In the jungles quadrupeds are numerous; lions and leopards, cynhyenas and wild cats haunt the forests; the elephant and the rhinoceros, the giraffe and the Cape buffalo, the zebra, the quagga (?), and the koodoo wander over the plains; and the hippopotamus and crocodile are found in every large water. The Arabs speak of wild dogs in the vicinity of Unyanyembe, describing them as being about eighteen inches in height, with rufous-black and shaggy coats, and long thick tails; they are gregarious, running in packs of from 20 to 200; they attack indiscriminately man and the largest animals, and their only cry is

* The nyanyi or cynocephalus in the jungles of Usukuma attains the size of a greyhound; according to the people, there are three varieties of colour—red, black, and yellow. They are the terror of the neighbouring districts. Women never dare to approach their haunts; they set the leopard at defiance, and, when in a large body, they do not, it is said, fear the lion. The Colobus guereza, or tipped monkey, the "polume" of Dr. Livingstone (chap. xvi.), here called mbega, is admired on account of its shiny black skin and snowy-white mane. It is a clean animal, ever occupied in polishing its beautiful garb, which, according to the Arabs, it tears to pieces when wounded, lest the hunter should profit by it. The mbega lives in trees, seldom descending, and feeds upon the fruit and the young leaves.

a howl. About the time of our autumn the pools are visited by various kinds of aquatic birds, widgeon, plump little teal, fine snipe, curlew, and crane; the ardea* or white "paddy-bird" of India, and the "lily-trotter" (*Parra Africana*), are scattered over the country; and sometimes, though rarely, the chenalopex or common Egyptian goose and the gorgeous-crowned crane (*Balearica pavonina*), the latter a favourite dish with the Arabs, appear. In several parts of Unyamwezi, especially in the north, there is a large and well-flavoured species of black-backed goose (*Sakidornis melanota*): the common wild duck of England was not observed. Several specimens of the Buceros,* the secretary-bird* (*Serpentarius reptilivorus*), and large vultures, were observed in Unyamwezi; the people do not molest them, holding the flesh to be carrion. The Cuculus indicator, called in Kisawahili tonguee, is common; but, the honey being mostly hived, it does not attract attention. Grillivori, a species of thrush, about the size of common larks, with sulphur-yellow patches under the eyes, and two naked black striæ beneath the throat, are here migratory birds: they do good service to the agriculturist against the locust. A variety of the Loxia or grossbill constructs nests sometimes in bunches hanging from the lower branches of the trees. The mtiko, a kind of water-wagtail (*Motacilla*), ventures into the tents with the audacity of a London sparrow, and the Africans have a prejudice against killing it. Swallows and martins of various kinds, some peculiarly graceful and slender, may be seen migrating at the approach of winter in regular travelling order: of these, one variety resembles the English bird. The Africans declare that a single species of hirundo, probably a sand-martin, builds in the precipitous earth-banks of the nullahs: their nests were not seen, however, as in Southern Africa, under the eaves of houses. There are a few ostriches, hawks, ravens, plovers, nightjars (*Caprimulgidae*), red and blue jays of brilliant plume, muscicapæ, loxias, blackcaps or mock-nightingales (*Motacilla atrocapilla?*), passerines of various kinds, hoopoes, bulbuls, wrens, larks, and bats. There are but few poisonous animals. Besides the dendrophis, the only ophidia seen in the country were snakes, with slate-coloured backs and silver bellies, resembling the harmless "mas" or "hanash"† of Somaliland: they abound in the houses and destroy the rats. The people speak of a yellow and brown coated snake, eight feet long by five or six inches in

* Dr. Livingstone (chap. xxii.) mentions the *Tragopan Leadbeaterii* in W. Africa by the name of "lehututu." The *Buceros buccinator* was also observed; and in places the species called by Mr. Mansfield Parkyns ('Life in Abyssinia,' chap. xvii.) abba geumba, or the *Buceros Abyssinicus*, was observed.

† It is the *Psammophis sibilans* (L); *C. moniliger* (Lacépède), according to Mr. Blyth ('Journal of the As. Soc. of Bengal,' vol. xxiv., p. 306), who declares it to be not venomous.

diameter; it is probably a boa or rock snake. Chúrá or ranæ* are numerous in the swamps, where the frog-concerts resemble those of the New World; and in the regions about the Tanganyika Lake a large variety makes night hideous with its croakings. The hirudo is found in the lakes and rivers of the interior, as well as in Zanzibar and on both coasts of Africa; according to the Arabs leeches are of two species, large and small. The people neither take precautions against them when drinking at the streams, as the Somal do, nor are they aware of any officinal use for these animals; moreover, it is impossible to persuade a Msawahili to collect them: they are of "p'hepo" or fiendish nature, and never fail to haunt and harm their captor. Jongo, or huge millipedes, some attaining a length of half a foot, with shiny black bodies and red feet, are found in the fields and forests, especially during the rains: covered with epizoa, these animals present a disgusting appearance, and they seem, to judge from their spoils, to die off during the hot weather. At certain seasons there is a great variety of the papilionaceous family in the vicinity of waters, where libellulae or dragonflies also abound. The country is visited at irregular times by flights of locusts, here called nzige. In spring the plants are covered in parts with the phánzi, a large pink and green variety, and with the destructive species depicted and described by Salt:† they rise from the earth like a glowing rose-coloured cloud, and disappear about the beginning of the rains. The black leather-like variety, called by the Arabs "Satan's ass," is not uncommon: it is eaten by the Africans, as are many other species upon which strangers look with disgust. The Arabs describe a fly which infests the forest patches of Únyamwezi: it is about the size of a small wasp, and is so fatal that cattle attacked by it are at once killed and eaten before they become carrion from the venomous effects. This may be either the Abyssinian tsalsaliyah or a remnant of the South African tsetse (*Glossina morsitans*), still met with in the uncultivated regions to the north. About Kilwa the people speak of a fly called kipángá (in the plural *vipángá*), which, from their account, greatly resembles the tsetse.‡ In parts the country is dotted with ant-hills, which, when old, become hard as sandstone: they are gene-

* Of the ranæ there are many varieties. The largest is probably the "matmalo" of S. Africa; it is eaten by the Wagogo and other tribes. A smaller species is of dark colour, and with long legs, which enable it to hop great distances. A third is of a dirty yellow, with brownish speckles. There is also a small green frog, which adheres to the broad and almost perpendicular leaves of the thicker grasses.

† 'A Voyage to Abyssinia' (London, 1814): Appendix iv.

‡ The tsetse may have died out of the country generally, in consequence of the destruction of large game. In S. Africa it has been found that the insect may return in company with cattle.

N.B.—Since the above was in print, Mr. Adam White has described a specimen submitted to him as a true tsetse, whose habitat therefore may safely be prolonged to the Equator. See Chap. IV.

rally built by the termite under some shady tree, which prevents too rapid drying, and apparently the people have not learned, like their brethren in South Africa, to use them as ovens.

From Tura, the western, to Unyanyembe, the central, district of Unyamwezi, caravans usually number seven marches, making a total of 60 rectilinear geographical miles. As far as Kigwa there is but one line of route; from that point travelling parties diverge far and wide, like ships making their different courses.

The first march traverses the Tura plain from east to west in 1 h. 30 m. The road leading westward with northing passes a succession of villages and fields where holcus and sesamum, maize, millet, and other grains alternate with manioc and gourds, watermelons, and various pulses: their appearance is striking after the dull desert tracts of Mgunda Mk'halí, whose sinuous wavy line of black jungle still bounds the distant north. The settlement of Tura is rapidly increasing, as is proved by the barking of the trees, which are thus destroyed without the trouble of felling. The shortness of this march is owing to the necessity of laying in provisions for the next station.

From the Tura district caravans usually make the Kwale or Partridge nullah: the line spans a thin jungle based upon a glaring white soil. This watercourse, running to the N.N.W., abounds even in the dry season with deep shady pools, which render it the favourite halting-place. The porters apply themselves with energy to fishing; they also find a large edible bivalve, and in the surrounding jungle elephants and giraffes are frequently killed. The total length of this march is 6 h. 30 m.; and in the dry season the kraal-place is usually converted into heaps of cinders.

The third station is reached in 8 h. 30 m. Crossing the Kwale nullah, the caravan traverses a plain of black earth, thinly garnished with grass and thorn-trees. It then passes a broad jheel or shallow pond, surrounded by the emerald verdure affected by aquatic birds, and girt with Nature's avenues of tall trees; during the drought it is an expanse of sun-cracked mud. A thin jungle, partially felled and burned, thence leads over hilly and rolling ground to a well-cultivated clearing, called Rubuga, the second district of eastern Unyamwezi. A succession of villages here appears, flanked on one side by huge boulders of granite; the fertility of the soil is evidenced by the live hedges of dark dense verdure which embosom the settlements—even the long poles forming the palisading put forth crowns of leaves. Another stretch of thin jungle leads to the western edge of the district and the well-stockaded village of the chief. The Sultan of Rubuga, a stranger of Wakimbu origin, in 1858 was one Máulá or Máurá, a hospitable man, but, τοῦ πλειονος ἐξαγόμενος,*—somewhat extortionate,—like all

his tribe. He was celebrated for his wealth in cattle : the herds appeared peculiarly fat and well-grown. There is a swamp near the head-quarter settlement, and water lies either in wells from seven to eight feet deep or close to the surface.

The next station to the westward of Rubuga is Ukona, also pronounced Rukona or Lukona ; it is made in 2 h. 15 m. The rolling country is here populous and highly cultivated ; a few jungle-patches, however, still linger. The cannabis and datura, with its large fetid flowers, the brinjall and castor grow near every village, and cotton-plots, carefully hedged round against the cattle, afford material for the loom.

Passing from the fertile slopes of Ukona, the route traverses, in 5 h. 5 m., an open wavy country, streaked with thin forest of mimosa, intogwe or wood-apple, and quadrangular cactus ; shallow swamps thence lead to the third district, Kigwa or Mkiqwa. Here travellers usually prefer the kraal to the dangerous hospitality of Sultan Mánwá. The versant of this country is still southerly, showing that it lies outside the limits of the great Central Depression ; beyond this point it trends to the west. The water is pure, but in the hot season it is thick with sand and clay.

The sixth march occupies about 6 h. 30 m. The road traverses a thin growth of gun-trees, mimosas, and bauhinias, with tiers, earth-waves, and low rolling lines of tawny-yellow hill, mantled with umbrella-shaped trees, and sometimes capped with blocks and boulders, extending to a considerable distance on both sides. This forest is infamous for robbery and murder. Here Msimbira, a sultan of the Wasukuma or northern Wanyamwezi, sends large plundering parties ; and Manwa, chief of Kigwa, has relieved many a porter of his pack. An old man attached to the Expedition, having lagged behind, armed only with an assegai, was attacked by three highwaymen, and cruelly beaten. The Arab merchants of Unyanyembe—one of them has lost as many as fifty loads—are loud in their menaces : the only precaution now taken by caravans is to assemble in overpowering numbers before attempting to pass the forest. The end of this day's journey is at the mass of villages upon the eastern frontier of Unyanyembe, the central district of Unyamwezi, the Land of the Moon. The Expedition halted at Hanga, a large village, distant five hours' march from Kazeh ; it is rich in cattle, lying upon a gentle slope, with a runnel of sweet water in front, backed by a heap of granite boulders, from whose interstices grow a forest of thorns and tall cactaceæ.

The end of the week conducts the traveller to Kazeh or to Ihárá, in Central Unyanyembe. The country presents a succession of waves of brown and red clays, scattered over with sand, and low stony hills divided by streamlets, upon whose banks vegetation is

luxuriant. The road gradually ascends into a well-cultivated and expansive plateau, whose summit commands a fine view of the large Arab settlements. These places demand a detailed notice.

Unyanyembe, the central and principal province of Unyamwezi, is, like Zungomero, in Khutu, the great bunder or meeting-place of merchants, and the point of departure for caravans which radiate into the interior of Central Intertropical Africa. Here the Arab merchant from Zanzibar meets his compatriot returning from the Tanganyika Lake and from Uruwwa. Northwards well-travelled lines diverge to the Nyanza Lake, and to the powerful kingdoms of Karagwah, Uganda, and Unyoro; from the south, Urori and Ubena, Usanga and Usenga send their ivory and slaves; and in the south-west, K'kokoro, Ufipa, and Marungu barter their valuables for cottons, wires, and beads. The central position and the comparative safety of Unyanyembe have made it the head-quarters of the Omani or pure Arabs, who, in many cases, settle here for years, remaining in charge of their depôts whilst their factors and slaves travel about the country and collect the items of traffic. At Unyanyembe the merchant must expect some delay. The porters, whether hired upon the coast or at the Tanganyika Lake, here disperse, and a fresh gang must be collected—no easy task when the sowing season draws nigh.

Unyanyembe, which rises about 3480 feet above sea-level, and lies 356 miles in rectilinear distance from the eastern coast of Africa, resembles in its physical features the lands about Tura. The plain or basin of Ihará, or Kwihiárá, a word synonymous with the "Bondei" or low-land of the coast, is bounded on the north and south by low, rolling hills, which converge towards the west, where, with the characteristically irregular lay of primitive formations, they are crossed almost at right angles by the Mfuto chain. The position has been imprudently chosen by the Arabs; the land suffers from alternate drought and floods, which render the climate markedly malarious. The soil is aluminous in the low lands—a plain of brown earth, with a subsoil of sand and sandstone, from 8 to 12 feet below the surface; the water is often impregnated with iron, and the higher grounds are uninhabited tracts covered with bulky granite-boulders, bushy trees, and thorny shrubs.

Contrary to what might be expected, this "Bunder-district" contains villages and hamlets, but nothing that can properly be termed a town. The Mtemi or Sultan, Fundikira, the most powerful of the Wanyamwezi chiefs, inhabits a tembe, or square settlement, called "Ítitenya," on the western slope of the southern hills. A little colony of Arab merchants has four large houses at a neighbouring place, "Mawiti." In the centre of the plain lies "Kazeh," another scattered collection of six large, hollow oblongs, with central courts, garden-plots, store-rooms, and outhouses for

slaves. Around these nuclei cluster native villages—masses of Wanyamwezi hovels, which bear the names of their founders.

This part of Unyanyembe was first colonised about 1852, when the Arabs who had been settled nearly ten years at Kigandu of P'huge, a district of Usukuma, one long day's march north of Kazeh, were induced by Mpagamo, a Mnyamwezi sultan, to aid them against Msimbira, a rival chief, who defeated and drove them from their former seats.* It is difficult to average the number of Arab merchants who, like the British in India, visit but do not colonise ; they rarely, however, exceed twenty-five in number ; and during the travelling season, or when a campaign is necessary, they are sometimes reduced to three or four ; they are too strong to yield without fighting, and are not strong enough to fight with success. Whenever the people have mustered courage to try a fall with the strangers, they have been encouraged to try again. Hitherto the Arabs have been on friendly terms with Fundikira, the chief. Their position, however, though partly held by force of arms, is precarious. They are all men of Oman, with one solitary exception, an Indian Kojah, named Musa Mzuri, or "handsome Moses," who is the earliest surviving explorer of Unyamwezi.† In July, 1858, an Arab merchant, Silim bin Masud, returning from Kazeh to his home at Msene, with a slave-porter carrying a load of cloth, was, though well armed and feared as a good shot, attacked at a water in a strip of jungle westward of Mfuto, and speared in the back by five ruffians, who afterwards proved to be subjects of the Sultan Kasanyare, a Mvinza. The Arabs organised a small expedition to revenge the murder, marched out with 200 or 300 musketeer-slaves, devoured all the grain and poultry in the country, and returned to their homes without striking a blow, because each merchant-militant wished his fellows to guarantee his goods or his life for the usual diyat, or blood-money, 800 dollars.‡ This impunity of crime will probably lead to other outrages.

The Arabs live comfortably, and even splendidly, at Unyanyembe. Their houses, though single-storied, are large, substantial,

* The details of this event were supplied by an actor in the scenes ; they well illustrate the futility of the people. The Arabs, after five or six days of skirmishing, were upon the point of carrying the bomah or palisade of Msimbira, their enemy, when suddenly at night their slaves, tired of eating beef and raw ground-nuts, secretly deserted to a man. The masters awaking in the morning found themselves alone, and made up their minds for annihilation. Fortunately for them, the enemy, suspecting an ambuscade, remained behind their walls, and allowed the merchants to retire without an attempt to cut off their retreat. Their employer, Mpagamo, professing himself unable to defend them, the strangers, deeming themselves insecure, abandoned his territory. Sney bin Amir and Musa Mzuri, the Indian, settled at Kazeh, then a desert, built houses, sunk wells, and converted it into a populous place.

† As will appear in Chap. XI., the merchants until 1830 made Usanga and Usenga the terminus of their inland journeys.

‡ When taken from Africans, the diyat is required in slaves, ivory, and cattle.

and capable of defence. Their gardens are extensive and well planted ; they receive regular supplies of merchandise, comforts, and luxuries from the coast ; they are surrounded by troops of concubines and slaves, whom they train to divers crafts and callings ; rich men have riding-asses from Zanzibar, and even the poorest keep flocks and herds. At Unyanyembe, as at Msene, and sometimes at Ujiji, there are itinerant fundi, or slave-artisans—blacksmiths, tinkers, masons, carpenters, tailors, potters, and rope-makers, who come up from the coast with Arab caravans. These men demand exorbitant wages. A broken matchlock can be repaired, and even bullets cast ; good cord is purchaseable ; and for tinning a set of 17 pots and plates 5 shukkah merkani are charged. A pair of Arab stirrups are made up for 1 shukkah besides the material, and chains for animals at about double that price. Fetters and padlocks, however, are usually imported by caravans. Pack-saddles are brought from Zanzibar : in caravans sometimes a man may be found to make them. There is, moreover, generally some pauper Arab who for cloth will manufacture a ridge-tent ; and as most civilized Orientals can use the needle, professional tailors are little required. Provisions are cheap and plentiful ; the profits are large ; and the Arab, when wealthy, is disposed to be hospitable and convivial. Many of the more prosperous support their brethren who have been ruined by the chances and accidents of trade. When a stranger appears amongst them, he receives the “hishmat l'il gharib,” or the guest-welcome, in the shape of a goat and a load of white rice ; he is provided with lodgings, and is introduced by the host to the rest of the society at a general banquet. Their great deficiency is the want of some man to take the lead. About fifteen years ago Abdullah bin Salim, a merchant from Zanzibar, with his body of 200 armed slaves, kept the whole community in subjection : since his death, in 1852, the society has suffered from all the effects of disunion where union is most required. The Arab is even in Africa a Pantisocrat, and his familiarity with the inferior races around him leads to its proverbial consequences.

The houses of the Arabs are Moslem modifications of the African tembe, somewhat superior in strength and finish. The deep and shady outside verandah, supported by stout uprights, shelters a broad bench of raised earthwork, where men sit to enjoy the morning cool and the evening serenity, and where they pray, converse, and transact their various avocations. A portcullis-like door, composed of two massive planks, with chains thick as a ship's cable—a precaution rendered necessary by the presence of wild slaves—leads into the barzah,* or vestibule. The only furniture is a pair of clay benches extending along the right and left sides,

* Bárází is the Kisawahili form of the Arabic Barzah, a hall or outer room where the master receives strangers.

with pillow-shaped terminations of the same material : over these, when visitors are expected, rush mats and rugs are spread. From the barzah a passage, built at the angle proper to baffle the stranger's curiosity, leads into the interior, a hollow square or oblong, with the several rooms opening upon a courtyard, which, when not built round, is completely closed by a liwan—a fence of small tree-trunks or reeds. The apartments have neither outward doors nor windows : small bull's-eyes admit the air, and act as loopholes in case of need. The principal room on the master's side of the house has a bench of clay, and leads into a dark closet where stores and merchandise are placed. There are separate lodgings for the harem, and the domestic slaves live in barracoons or in their own outhouses. This form of tembe is perhaps the dullest habitation ever invented by man. The exterior view is carefully removed from sight, and the dull, dirty courtyard, often swamped during the rains, is ever before the tenant's eyes ; the darkness caused by want of windows painfully contrasts with the flood of sunshine pouring in through the doors, and at night no number of candles will light up its gloomy walls of grey or reddish mud. The breeze is either excluded by careless frontage, or the high and chilling winds pour in like torrents ; the roof is never water-tight, and the walls and rafters harbour hosts of scorpions and spiders, wasps and cockroaches. The Arabs, however, will expend their time and trouble in building it rather than trust their goods in African huts, exposed to thieves and to the frequent fires which result from barbarous carelessness. Everywhere, when a long halt is in prospect, they send their slaves for wood to the jungle, and superintend the building of a huge tembe. They neglect, however, an important precaution,—a sleeping-room raised above the mean level of malaria.

Another drawback to the Arab's happiness is the failure of his constitution : a man who escapes illness for two successive months boasts of the immunity. The older residents have learned to moderate their appetites. They eat but twice a-day—at sunrise, and at noon ; after the midday meal they confine themselves to chewing tobacco or the dried coffee of Karagwah. They avoid strong meats, especially beef and game, which are considered heating and bilious, remaining satisfied with light dishes, omelets and pillaus, harisah,* firni,† and curded milk ; and the less they eat the more likely they are to escape fever. The general health has been improved by the importation from the

* Harisah, in Kissawahili "boko-boko," is the roast beef—the *plat de résistance*—of the Eastern and African Arab. It is a kind of pudding made with finely shredded meat, boiled with flour of wheat, rice, or hoicus to the consistence of a thick paste, and eaten with honey or sugar.

† Firni, an Indian word, is synonymous with the muhallibah of Egypt, a thin jelly of milk-and-water, honey, rice-flour, and spices, which takes the place of our northern rice-pudding.

coast of wheat, and a fine white rice, instead of the red aborigen of the country; and by the introduction of various fruits, plantains, limes, and papaws; and vegetables, brinjalls, cucumbers, and tomatos, which relieve the indigenous holcus and maize, manioc and sweet-potato, millet and phaseoli, sesamum and groundnuts. They declare to having derived great benefit from the introduction of onions—an antifebral, which flourishes better in Central than in Maritime Africa.* As might be expected, however, amongst a floating population with many slaves, foreign fruits and vegetables are sometimes allowed to die out. Thus some enterprising merchant introduced into Unyanyembe the mzungu, or bidam,† of the coast, and the date-tree: the latter, watered once every third day, promised to bear fruit, when, in the absence of the master, the Wanyamwezi cut up the young shoots into walking-sticks. Sugar is imported: the water-wanting cane will not thrive in arid Unyanyembe, and honey must be used as a succedaneum. Black pepper, universally considered cooling by Orientals, is much eaten with curry stuffs and other highly-seasoned dishes, whereas the excellent chillies and bird-pepper, which here grow wild, are shunned for their heating properties. Butter and ghee are made by the wealthy; humbler houses buy the article, which is plentiful and good, from the Wanyamwezi. Water is the usual beverage. Some Arabs drink togwa, a sweet preparation of holcus; and others, debauchees, indulge in the sour and intoxicating pombe, or small-beer.

The market at Unyanyembe varies greatly according to the quantity of the rains: as usual in barbarous societies, a dry season, or a few unexpected caravans, will raise the prices, even to trebling; and the difference of value in grain before and after the harvest will be double or half of what it is at par. The price of provisions in Wanyamwezi has increased inordinately since the Arabs have settled in the land. Formerly a slave-boy could be purchased for 5 fundo, or 50 strings of beads: the same article would now fetch 300. A fundo of cheap white porcelain beads would procure a milch cow; and a goat, or 10 hens its equivalent,

* The onion, so well known in S. Africa, upon the island of Zanzibar rapidly degenerates into a kind of houseleek. In Wanyamwezi it is of tolerable size and flavour. It enters into a variety of dishes, the most nauseous being probably the sugared omelet. In consequence of demand, onions are expensive in the interior; an indigo-dyed shukkah will purchase little more than a pound. When the bulbs fail, the leaves are chopped into thin circles, fried in clarified butter with salt, and eaten as a relish with meat. They are also inserted into marak or soups, to disguise the bitter and rancid taste of stale ghee. Onions may be sown at all seasons except during the wet monsoon, when they are liable to decay. The Washenzi have not yet borrowed this excellent and healthy vegetable from the Arabs. Garlic has also been tried in Unyanyembe, but with less success; moreover, it is considered too heating for daily use.

† See Chap. II.

was to be bought for 1 khete. In plentiful years Unyanyembe is, however, still the cheapest country in East Africa, and, as usual in cheap countries, it induces the merchant to spend more than in the dearest. Paddy of good quality, when not in demand, is worth 1 shukkah of American domestics for 20 kayla,* maize 25, and sorghum, here the staff of life, when in large stock, 60. A fat bullock may be bought for 4 domestics, a cow costs from 6 to 12, a sheep or a goat from 1 to 2. A hen, or its equivalent 4 or 5 eggs, may be bought for 1 khete of coral or pink porcelain beads;† 1 fundo of the same will purchase a huge bunch of plantains, with which māwā or wine,‡ and siki or vinegar are made; and the Wanyamwezi will supply about a pint of milk every morning at the rate of 1 shukkah per mensem. A kind of mud-fish is caught by the slaves in the frequent pools which, during the cold season, dot the course of the Gombe Nullah, lying 3 miles north of Kazeh; and return-caravans often bring with them stores of daga'a or small fry from the Tanganyika Lake.

The traveller by means of introductory letters to the Doyen of the Arab merchants can always recruit his stock of cloth, beads, and wires, powder and ball, spices, comforts, and drugs. He will pay, however, at Unyanyembe about five times their market value at Zanzibar: sugar, for instance, sells at its weight in ivory, or nearly one-third more than its weight in beads. The merchants accept a draft payable at Zanzibar, and thus Unyanyembe may be converted into a second point of departure by the explorer.

From Unyanyembe 20 marches, which are seldom accomplished under 25 days, conduct the traveller to Ujiji, upon the Tanganyika Lake. Of these the fifth station is Msene, the great Bunder of Western Unyamwezi—it is usually reached in 8 days; and the twelfth is the Malagarazi River, the western limit of the fourth region.

There are, however, two main roads from Unyanyembe to the Lake. The more lengthy—which finds favour with up-caravans who wish to recruit or to trade en route—diverges northward of the right line leading to the Malagarazi Ferry, following, in fact, the two sides of a triangle, whose apex is the Bunder “Msene.” The several stations on this road will be described in the following pages. The southerly and direct path is preferred by return-

* The kayla in Zanzibar is a grain measure consisting of four kubabah. It varies from five to seven pounds. See Chap. XVI.

† Beads in the interior of Africa are sold by the following scale:—4 bitil (each a single length from index-tip to wrist)=1 khete; 10 khete (each a doubled length round a man's throat)=1 fundo. For other divisions, see Chap. XVI.

‡ See Chap. XIV. The vinegar is also made of honey (four parts) and water (one part) mixed, and poured in a calabash under the sun to ferment and acetize, an imperfect operation, which takes place after about a fortnight. Honey is abundant, and the swarms of bees sometimes clear the villages.

caravans, who, being laden with ivory and slaves, would avoid the temptations of Msene. The difference of distance is about 65 miles, and the greatest interval between the two lines, which converge at Usenye, is 30 miles.

Leaving Kazeh, the road to Msene running due west spans an undulating and highly cultivated country, confined by granitic cones and ridges, which seem to trend in every direction. After the fifth mile it winds round the base of Zimbili, a lumpy hill, with a north and south lay, and conspicuous as a landmark from the Agab settlements. The remnant of the way traverses a fair and populous land, with irregularly disposed and distant hills on both sides. Towards the end of the march the country declines westward, and marsh begins to mingle with field and plantation. The station Yombo, which is reached in 3 h. 40 m., was in 1858 a new and picturesque village of circular huts, surrounded by plantains and wild fruit-trees—the Mkuba,* the Mchongoma,† the Mwongo,‡ and the gigantic Borassus, or Palmyra.§ The situation, however, is low and unhealthy; and provisions, in consequence of the vicinity of the Kazeh market, are not always procurable.

From Yombo a long march of 7 h. 40 m. leads the caravan to the district of Mfuto. Emerging from the fields and villages, the road enters a thick jungle, with low wooded and stony hills, which rise to about 4000 feet above sea-level, on the left hand. Thence ascending a gently rising ridge newly cleared of forest, it leaves on the right the little settlement of Pano, where sheep and goats, fowls and eggs, are sometimes procurable. Another jungle strip leads to the clearing of Mfuto, a broad, populous, and fertile valley plain, where the stately tamarind flourishes to perfection. Caravans generally march through the alternate patches of thin wood and field, studded with granite blocks, to the western boundary of Mfuto, where water is plentiful and provisions can be readily procured. At this place, in 1858, was the village of Irora, also called Rora and Lola, the property of Salim bin Salih, a coast-Arab from Mbuamaji, who claimed a Harisi origin. The settlement consisted of a large strong tembe, in which the master resided with his wives and children, dependants and slaves. Around it rose several round huts or outhouses, in which travellers were allowed to repose; but, after the hospitality of Kazeh, the greeting of Salim bin Salih was not prepossessing. From Mfuto the direct

* The mkuba or mkidif bears an edible red plum which, though scanty in flesh, is by no means unpalatable.

† The mchongoma bears a chocolate-coloured berry about the size of a cherry, with a dark stone; though edible, it lacks the grateful acid of the mkuba.

‡ See Chap. IV.

§ The borassus, which does not exist in the barren platform of Ugogo, reappears in Unyamwezi, and extends as far as the Tanganyika Lake. At Msene it is tapped for toddy. In the wilder districts the people are unable to climb it.

road leads westward to the Malagarazi River, and leaves to the north the détour made by caravans to Msene.

The third march, which occupies 6 h. 30 m., leads over a flat country, through fields and villages, divided by uncleared ground. Travellers generally halt at the settlement called Muinyi Chandi, where certain Arabs from Oman have built large tembe, barracks, and warehouses. This district supplies the adjoining countries with turmeric, which the merchants declare was not brought from Zanzibar. A small quantity is also grown in Unyanyembe. In one of the strips of jungle which divides this road, Silim bin Masud was murdered in 1858.

The fourth march, occupying about 5 h., crosses thick jungle and low swampy ground; whence, bending northwards, it enters a rocky gorge of rough hills, overgrown with thorns and trees, and running parallel to the chain observed in the last march. Upon the low levels appear the borassus, the mkuba, and the sugar-cane. Leaving the gorge, the track spans broken ground amongst low elevations, and finally emerging from the intricate country abuts upon a highly cultivated flat, peculiarly rich in black cattle. On the western boundary of the district called Wilyankuru, a wealthy merchant, Salim bin Said, surnamed Simbá, or the Lion, has obtained from the Sultan Mrorwa permission to build a large tembe. He never allows a stranger to pass his house without entertainment.

At the Simba's village the road again divides; the more direct branch passes northwards, and, crossing through Uyowwa, or Uyonwa, a district ruled by Sultan Murámíra, a chief of Muhinda family, after 12 h. to 13 h. marching leads to the settlements of Msene. This track leads through fertile and well-cultivated lands into a dense jungle, which stretches with a single interruption almost up to the doors of the villages.

From Western Wilyankuru the southern line, which is the favourite, crosses jungles and fields in strips, with grassy swamps and bottoms of black mud veiled after rain with rusty-coloured water. In places appear villages and large plantain-grounds. After a march of 2 h. 30 m. it leaves the district of Masenge, and in 2 h. more reaches the settlement of Kirira. Here, also, the Arabs have erected solid and extensive tenements, surrounded by tall hedges of milk-bush. They call the air a medicine, and vaunt its virtues after the unhealthy climate of Unyanyembe. They are in high favour with the Sultan Kafáfíra, a man equally celebrated for value and conduct. Hard by the settlement, in almost impassable lines of vegetation, lies the Gombe Nullah, the main drain of this basin. It forms a deep and rapid stream during the rains, and throughout the dry season it retains in parts deep pools, which shelter the hippopotamus and the crocodile. At a distance from the water the fertility of the

soil diminishes, jungle is more common than clearing, flocks and herds are rarer, and the habitations reassume the comfortless circular form. The eastern frontier of the Msene district is reached after a march of 9 h. through a dense jungle with a few scattered clearings. Crossing the Gombe Nullah, and leaving sundry small villages embosomed in euphorbia, the line enters another thick jungle, along narrow paths in places undermined by rats. After passing the frontier it arrives in 2 h., making a total of 13 h. 30 m., at the settlements of Msene, where the dense wild vegetation on the east suddenly opening out discloses to the west a broad view of admirable fertility.

Msene, the great Bunder of Western Unyamwezi, may be called the capital of the coast Arabs and the Wasawahili, who, having a natural antipathy to their brethren of Oman, have abandoned to them Unyanyembe and its vicinity. Of late years, however, the Omani merchants, having been driven from the neighbouring districts by sundry murders into Msene, may at times be met there to the number of four or five. The inhabitants are chiefly Wasumbwá, a subtribe of the Wanyamwezi race. There is, however, besides Arabs and Wasawahili, a large floating population of the pastoral clan called Watosi, and fugitives from Uhha. In 1858 the chief of Msene was the Sultan Masanza. Both he and Funza, his brother, were hospitable and friendly to travellers, especially to the Arabs, who but a few years ago beat off with their armed slaves a large plundering party of the ferocious Watuta. This chief has considerable power, and the heads of criminals elevated upon poles in front of his several villages show that he rules with a firm hand. He is never approached by a subject without the clapping of hands and the kneeling which in these lands are the honours paid to royalty. He is a large-limbed and sinewy old man, dressed in a dirty Arab check, over a coat of rancid butter, with a broad brass disk neatly arabesqued round his neck, with a multitude of little pigtailed where his head was not bald, and with masses of sambo or wire rings round his ankles. Like the generality of sultans, he despises beads as an article of decoration, preferring coils of brass or copper. He called several times at the house occupied by the Expedition, and on more than one occasion brought with him a bevy of wives, whose deportment was rather naïve than decorous.

Msene, like Unyanyembe, is not a town, but a mass of detached settlements, which are unconscious of a regular street. To the northwards lie the villages of the Sultan—Kwhángá and Yovu. These are surrounded with a strong stockade, a deep moat, and a thick milk-bush hedge, intended for defence. The interior is occupied by thatched circular huts, divided by open squarelike spaces, and wynds and alleys are formed by milk-bush hedges and

palisades. There are distinct places for the several wives, families, and slaves. The other settlements—Mbugáni ("in the wild") and Mji Mpia ("new town"), the place affected by the Wasawahili—cluster in a circle, separated by short cross-roads, which after rain are ankle-deep in mud, from Chyámbo, the favourite locale of the coast Arabs. This settlement, which contained in 1858 nine large tembe and about 150 huts, boasts of an African attempt at a soko or bazar, a clear space between the houses, where, in fine weather, bullocks are daily slaughtered for food, and where grain, vegetables, and milk are exposed for sale. At Msene a fresh outfit of cloth, beads, and wire can be procured for a price somewhat higher than at Uhyanyembe. The merchants have small stores of drugs and spices, and sometimes a few comforts, as coffee, tea, and sugar. The latter is generally made of granulated honey, and therefore called "sukkári zá asálí." The climate of Msene is damp, the neighbouring hills and the thickly-vegetated country attracting an abundance of rain. It is exceedingly unhealthy, the effect doubtless of filth in the villages and of stagnant waters spread over the land. The Gombe Nullah, which runs through the district, about 6 h. march from the settlements, discharges its superfluous contents after rain into the many lakelets, ponds, and swamps of the lowlands. Fertilized by a wet monsoon, whose floods from the middle of October to May are interrupted only by bursts of fervent heat, the fat, black soil manured by the decay of centuries, reproduces abundantly anything committed to it. Flowers bloom spontaneously over the flats, and trees put on their richest raiment. Rice of the red quality—the white is rare and dear—grows with a density and rapidity unknown in Eastern Unyamwezi. Holcus and millet, maize and manioc, are plentiful enough to be exported. Magnificent palmyras, plantains, and papaws, bauhinias and sycamores, and a host of wild fruit-trees, especially the tamarind, which is extensively used, adorn the land. The other productions are onions, sweet potatoes, and egg-plants, which are cultivated; turmeric, brought from the vicinity; tomatos and bird-pepper, which grow wild; pulses, beans, pumpkins, water-melons, onions (?), excellent mushrooms, and edible fungi. Milk, poultry, honey, and tobacco are cheap and plentiful. The currency at Msene in 1858* was the pipe-stem beads of white and blue porcelain, called sofi in the string, and individually masaro. Of these ten were sufficient to purchase a pound of beef. The other beads in demand were the sungomaji, or "pigeon-egg," the red-coral, the pink porcelain, and the shell-decoration called kiwangwa. The cheaper varieties may be exchanged for grain and vegetables, but they

* The date is specified, as the currency is liable to perpetual and sudden change, often causing severe losses to merchants, who, after laying in a large outfit of certain beads, find them suddenly unfashionable and therefore useless.

will not purchase fowls, milk, and eggs. The market at Msene is usually somewhat cheaper than that of Uuyanyembe, but at times the prices become exorbitant.

The industry of Msene is confined to manufacturing a few cotton cloths, coarse mats, clay pipeheads, and ironmongery.* As might be expected from the constitution of its society, Msene is a place of gross debauchery, most grateful to the African mind. All, from Sultan to slave, are intoxicated whenever the material is forthcoming, and the relations between the sexes are of the loosest description. The drum is never silent, and the dance fills up the spare intervals of carouse, till exhausted nature can no more. The consequence is, that caravans invariably lose numbers by desertion when passing through Msene. Even household slaves, born and bred upon the coast, cannot tear themselves from its Circean charms.

From Msene to the Malagarazi River are reckoned 7 long or 14 short marches. This country is no favourite with the traveller. A long steep of blue hills lying northwards, and in sight of the settlements, ever reminds him of the vicinity of the Watuta. The people upon the line of march are divided into several clans, and in places where Wanyamwezi and Wavinza herd with Wawende and Wagara, all are equally hostile to wealth. Villages are less frequent and more meanly built, and strangers are never admitted beyond the miserable faubourgs of the fenced hamlets. The land, also, is most unhealthy. After rain the rich, dark loam, like the black earth of Guzerat and the Deccan, becomes a coat of mire. Above is a canopy of cumulus and purple nimbus, which discharge their loads in copious daily floods. The vegetation becomes excessive, and, where there is no cultivation, a dense matting of coarse grass, laid by wind and rain, and rotted by the mud, veils the earth; and from below rises a shivering and clammy chill, the effect of extreme humidity. In the dry season it is but little less lethal. The sun distils poison from the ground, though unable to dry up the frequent swamps and deep pools, which, lined by double ranks of vegetation, are as malarious as the mangrove forests of the maritime regions. The paths, pitted with deep holes, are mere lines worn through the jungle.

A march of 4 h. 15 m. leads from the settlements of Msene to Sorora, on the extreme west of the district. The road spans the most fertile of valleys, through fields of red and white rice, over muddy tracks riddled by rat-holes. Dwarf huts, like inverted birds'-nests, are scattered over the cultivation; and everywhere in sight are villages, prettily embanked by huge hedges of milk-bush, and enlivened by growths of papaws and plantains, by the mwongo

* For a general account of these articles, see Chap. XIV.

with its damson-like fruit, the mtogwe or wood-apple, and by the tall palmyra, whose high columnar stem, with a central swell in each huge bole, is eminently attractive. After 1 h. 30 m. the path passes Mbali, the normal cultivators' village, built in a jungle-girt clearing, with double walls of euphorbia concealing the palisade, and tall grasses growing up to the doorways. Caravans rarely halt at this place, its provisions being exhausted by the markets of Msene. Another span of 2 h., through a dense jungle upon a dead flat, succeeded by rolling ground, bordered with low hills and covered with alternate bush and cultivation, leads to Sengati, a similar verdure-clad village of peasantry, where rice and other supplies are procurable. Thence an hour over a dead flat of fields and the rankest grass leads to rolling ground, in the vicinity of the Gombe Nullah, with scattered huts upon the rises, and villages built close to dense vegetation bordering upon the stream. Sorora, or Solola, is one of the most deadly spots in Unyamwezi; yet travellers bound for Ujiji are generally delayed for some days in this place of pestilence to collect a stock of rice, which is rarely procurable farther west.

From Sorora the second stage leads after 5 h. 30 m. to Kajjanjeri. Traversing a fetid marsh, the road enters a forest and spans a sharp angle of the Gombe Nullah, upon whose grassy and reedy banks lie during the droughts a few dilapidated "Baumrinden" canoes, showing that at times the bed becomes unfordable. Emerging from the dense and muddy jungle on the other side of the drain, the path traverses the luxuriant fields of sweet potato and maize around the settlements of Ukungwe, which lies about 2 h. 15 m. from Sorora. After heavy rains some of these villages are deeply inundated. Again plunging into a monotonous unhealthy jungle with muddy bottoms and tall thick grass, after 1 h. 15 m. the track passes the mean little village of Panda, where water is to be obtained, but provender is not. Thence to Kajjanjeri is a short march of 1 h. 30 m. through another muddy copse with occasional dwarf clearings. Kajjanjeri is a clump of round huts: to judge from the mud and grass which occupy the floors in the rainy season, it is tenanted only during the fair season by the cultivators of the surrounding fields. The climate is the terror of travellers. Kajjanjeri boasts of a sultan, but its rare patches of cultivation cannot supply caravans.

The third march, which lasts 4 h. 45 m., traverses from east to west the district of Usagozi, of old the capital province of Unyamwezi, and still one of its most civilized divisions. The country is laid out in alternate seams of grassy plain, dense jungle, and fertile field; the soil is a dark vegetable humus, which bears luxuriant crops of grain, vegetables, and tobacco; honey-logs hang upon every larger tree, cattle are sold to travellers, and the

people are deterred by the aspect of a dozen discoloured skulls capping tall poles planted in a semicircle at the principal entrance of each settlement from doing violence to caravans. Usagozi in 1858 was governed by Sultan Ryombo, an old chief "adorned with much Christian courtesy." His subjects are Wakalaganza, the noble tribe of the Wanyamwezi, mixed however with Watosi, a fine-looking race, markedly superior to their neighbours, but satisfied with leaky, ragged, and filthy huts in large but unfenced villages. The general dress of the people is bark-cloth stained a dull black. The sultan will supply travellers with porters, who cannot be hired beyond the limits of this province. Some authorities make Usagozi the western frontier of Unyamwezi, others place the boundary at Mukozimo, a few miles to the westward. It is certain however that beyond Usagozi the Wanyamwezi are but half proprietors of the soil.

The fourth march from Usagozi to Mukozimo occupies about 4 h. 45 m. The route, leading through grain-fields, thick jungle strips, and low grassy and muddy savannahs which must be rounded during the rainy monsoon, passes about half way the settlement of Masenga. It belongs to some stray Wagara or Wagala, an extensive tribe limiting Unyamwezi on the south and south-east, at a distance of about a week's march from the road. The head-quarter village is large and comfortable; supplies and water are abundant; but caravans seldom delay at Masenga, the people being neither safe nor hospitable. From this point the route, traversing cultivation, thick jungles, and low muddy bottoms of tall grass, chequered with lofty tamarinds, arrives at the large and well-palissaded villages of the Mukozimo district, occupied by Wanyamwezi, Wagara, and Wawende stragglers from the regions lying to the south-west of the Land of the Moon. Strangers are here not admitted into the Bomah, and merchants begin to camp in the jungle rather than mingle with the villagers, who even object to sell provisions. At one of these settlements the E. African Expedition was refused entrance on the plea that men had never yet been seen riding upon asses.

From Mukozimo to Usenye, the fifth station, is a long march of 7 h. 15 m. After crossing a succession of fields and jungle strips the road abuts about half way upon Uganza, a fine fenced village of Wawende, who will not supply travellers with provisions. Beyond Uganza lies a long grassy plain of black earth, where zebras and antelopes abound; a broad belt of jungle thence leads to the clearing which announces the vicinity of the populous and well-fenced village of Usenye. At this point terminates the neutral ground, which extending from Usagozi is peopled by a mixture of Wakalaganza (Wanyamwezi) and Watosi, Wagara, and Wawende. Here too ends the Land of the Moon, and

Uvinza, the country lying directly to its westward, commences. At Usenye the direct road from Unyanyembe anastomoses with the northern route after its détour to Msene. Here travellers march with increased precaution, deeming the Wavinza a more dangerous race even than their neighbours.

The land of Uvinza extends from the neutral ground on the frontier of Unyamwezi to the country of the Wakaranga westward; the northern and southern limits are imperfectly defined. The Wavinza hold the fertile grounds on the left bank of the Malagarazi River; the incursions of the Watuta have driven them from the right side, where now all is barren, only a few vestiges of huts lying in a dense mass of jungle. In 1858 the principal chief of the Wavinza was Sultan Mzogera or Mzongera, the Lord of the River.

The sixth stage from Msene is usually accomplished in 5 h. 20 m. After passing through the cultivated grounds of Usenye the route enters a deep jungle where still linger remains of villages plundered and burned by the Watuta, whose hills rise clearly defined on the right hand. Beyond this wild, a party of Wasawahili traders in 1858 had erected a settlement. About half way lies amongst rich cultivation Rukunda or Lukunda, a settlement of Wavinza. On the north of the road runs the Malagarazi River, whose plain is bounded by the far hills of the Watuta; the low levels of the neighbouring country have converted these places into perennial beds of soft, deep, and slippery mire, upon whose borders rice flourishes luxuriantly. The normal country—jungle, fields, and grasses—occurs between Rukunda and the terminus of this march, Wanyika of the Wavinza. At this place the water is abundant but ill-flavoured, the country is adorned with magnificent palmyras and huge clumps of plantain and euphorbia; cannabis and the wild arum grow wild; and the fields abound in water-melons and yellow cucumbers, grain, ground-nuts, manioc, sweet potato, thur, and tobacco. At Wanyika caravans are delayed by the necessity of settling blackmail with Sultan Mzogera, the Lord of the Malagarazi River. By withdrawing his canoes he can always enforce his claims, and the difficulty is to strike the balance between his covetousness and the parsimony of the ivory and slave dealers. He took from the Expedition, after a week's waste in haggling, about forty cloths, blue and white, six wire bracelets, and ten fundo of coral beads, declining to receive the inferior kinds: it is equivalent in these countries to 50*l.* in England. According to the Arabs he was not more than usually extortionate.

The seventh stage, from Wanyika to the Malagarazi River, concludes in 8 h. the passage of the fourth region. The road leads up and down an incline towards the valley of the river, where bush

and field alternate with black mud, putrid grass, and, after rains, with shallow pools. This march is divided by Unyanguruwwe, a miserable settlement, which produces, however, sorghum in abundance, sweet potatoes, and the finest manioc. Thence spanning cultivation and undulating grassy ground, and passing over hill-spurs to avoid the deeper swamps, it debouches from a jungle upon the alluvial plain, with the swift brown stream, in the dry season about fifty yards broad, swirling through the tall wet grasses of its banks on the right hand.* Northwards lies a wide expanse of emerald plain like a card-table, over which the stream when in flood debords to a distance of two miles, cutting it into deep creeks and inlets. It is bounded in the far distance by a sinuous line of faint blue hill. Westward and southward rises a wall-shaped ridge, stony and wooded, which buttresses the left bank of the river for some days' journey down the stream. The path, diverging towards the end of the march from a bend in the bed, enters broken ground and thin jungle, haunted by mosquitoes, where caravans usually encamp preparatory to crossing the Malagarazi River. The district on the left bank is called Ügaga; it contains a few villages, which supply travellers with scanty provisions at an exorbitant rate. Moreover, a second delay is here caused by the necessity of settling ferrage with the Mutwale† or Lord of the Ferry. The Sultan Mzogera has sold his permission to cross the river. The Mutwale now wants pay for permission to ferry across. He took from the Expedition fourteen cloths and one bracelet of brass wire, half his original demand; moreover, for each trip the ferryman received from one to five khetes of beads, according to the weight and value of the freight.‡

Such was the road from Unyanyembe through Msene to the Malagarazi River in 1858. On the direct line, numbering six stages§ from Mfuto to Usenye, few places require notice. Mimbi

* This was the only place in E. Africa where a herd of elephants was seen on the line of march.

† Mutwale or Mutware (in the plural Watwale) means a sultan's son or a minor chief amongst the Wasumbwa, the Wavinza, the Wajiji, and other adjoining races.

‡ The demands on return are generally even more exorbitant. The E. African Expedition was fined to the extent of seven cloths, a large jar of palm oil, and at least 300 khete or strings of white and blue porcelain beads.

§ The stations are as follows:—

1. Mfuto to Mimbi, 4 hours.
2. Mimbi to Unzari, 6 hours.
3. Unzari to Usange (Osenji of Mr. Cooley), 6 hours.
4. Usange to Usagozi (Osagozi of Mr. Cooley), 3 hours.
5. Usagozi to Uvungu, 6 hours 30 min.
6. Uvungu to Usenye, 4 hours.

At Mimbi the people are feared by strangers. From that point to Unzari, also an inhospitable district, the land is alternately swampy and jungly; tsetse-flies are troublesome in the patches of bush; the villages are hedged with luxuriant euphorbia, and fine palmyras are scattered over the country. Tobacco is plentiful

is a large village of Wakalaganza, who supply provisions to strangers. Unzari, a settlement amongst rice swamps, shows the last of the tembe or square hollow villages. A little westward lies the district of Uyogo. Beyond Uyogo is Usange, a starveling settlement of Wanyamwezi, near a thick jungle of thorns, with swamps and headlands along the road. Uvungu, also of the Wakalaganza, lies in a fertile grain country : it is rich in tobacco, but the water is unusually bad : here cattle and comfort end.

A still older road, alluded to by Messrs. Cooley* and Macqueen as leading through Ugunda and Ushisha, districts south of Mfuto and Msene, has now been abandoned.

The races requiring notice in this region are two, the Wakimbu and the Wanyamwezi.

The Wakimbu, who are emigrants into Unyamwezi, claim a noble origin, and derive themselves from the broad lands running south of Unyanyembe westward to K'hokoro. About twenty masika or years ago, according to themselves, in company with their neighbours the Wakonongo and the Wamia, they left Nguru, Usanga, and Usenga, in consequence of the repeated attacks of the Warori, and migrated to Kipiri, the district lying south of Tura ; they have now extended into Mgunda Mk'halii and Unyanyembe, where they hold the land by permission of the Wanyamwezi.† They build firmly stockaded villages, tend cattle, and cultivate sorghum and maize, millet and pulse, cucumbers and water-melons. Apparently they are poor, being generally clad in skins. They barter slaves and ivory in small quantities to the merchants, and some travel down to the coast. They are considered treacherous by their neighbours, and Mapokera, the Sultan of Tura, is according to the Arabs prone to commit "avaries."

and cattle abound, but meat and milk are rarely procurable. Between Unzari and Usange the last tembe are observed : the circular hut becomes the cultivator's normal habitation. To the west, Uvungu of the Wakalaganza is a large settlement surrounded by jungle and rice-growing swamps. The soil is rich, water is abundant, and tobacco as well as provisions may be purchased. Uvungu in 1858 was under a Sultan Magorna, an old man dressed in an uncommonly dirty fez and Arab checks, with loads of iron-wire sambo upon his ankles. He did not demand a honga or blackmail, but he begged hard and successfully for a little blue vitriol, the panacea of this country.

The indirect distance by dead reckoning from Unyanyembe to Ujiji, via Msene and the northern road, was calculated at 265 miles, the southern 318.

* 'Geography of N'yassi' (p. 23, Route to the Lake through Monomoezi). The details are slightly incorrect. "Ogara" is corrupted from Ugala, the lands of the Wagala mentioned above. Atumba is the Itumba of the Wakimbu. The "King of Oha" was never sovereign of the Wanyamwezi ; the tribe of Wahha, as will be seen, is a servile race. See also Mr. Macqueen on the 'Geography of Central Africa,' p. 118; and Chap. VII. of this book.

† In these regions there are few obstacles to immigrants. They visit the Sultan, make a small present, obtain permission to settle, and name the village after their own chief; but the original proprietors retain their rights to the soil.

They are known by a number of small lines formed between the hair of the temples and the eyebrows by raising the skin with a needle, and opening it by points laterally. In appearance they are dark and uncomely; their arms are bows and arrows, spears and knives stuck in the leathern waistbelt; some wear necklaces of curiously plaited straw, others a strip of white cowskin bound around the brow—a truly African decoration. Their language differs from Kinyamwezi.

The Wanyamwezi tribe, the proprietors of the soil, is the typical race in this portion of Central Africa: its comparative industry and commercial activity have secured to it a superiority over the other kindred races.

The aspect of the Wanyamwezi is alone sufficient to disprove the existence of very elevated lands in this part of the African interior. They are usually of a dark sepia brown, rarely coloured like diluted Indian ink, as are the Wahiao and slave races to the south, with negroid features markedly less Semitic than the people of the eastern coast. The effluvium from their skins, especially after exercise or excitement, marks their connection with the negro. The hair curls crisply, but it grows to the length of four or five inches before it splits; it is usually twisted into many little ringlets or hanks; it hangs down like a fringe to the neck, and is combed off the forehead after the manner of the ancient Egyptians and the modern Hottentots. The beard is thin and short, there are no whiskers, and the mustachio—when not plucked out—is scant and straggling. Most of the men and almost all the women remove the eyelashes, and pilar hair rarely appears to grow. The normal figure of the race is tall and stout, and the women are remarkable for the elongation of the mammary organs. Few have small waists, and the only lean men in the land are the juniors, the sick, and the famished. This race is said to be long-lived, and it is not deficient in bodily strength and savage courage. The clan-mark is a double line of little cuts like the marks of cupping made by a friend with a knife or razor along the temporal fossæ from the external edges of the eyebrows to the middle of the cheeks or to the lower jaws. Sometimes a third line or a band of three small lines is drawn down the forehead to the bridge of the nose. The men prefer a black, charcoal being the substance generally used, the women a blue colour, and the latter sometimes ornament their faces with little perpendicular scars below the eyes. They do not file the teeth into a saw-shape as seen amongst the southern races, but they generally form a triangular or wedge-shaped aperture by chipping away the internal corners of the two front incisors like the Damaras of S. Africa, and the women extract the lower central teeth. Both sexes enlarge the lobes of the ears. In many parts of the country skins are more commonly worn than

cloth,* except by the Sultans and the wealthier classes: they deride the Arabs for dressing during the march, instead of preserving their finery for display at home. The women wear the tobe of the coast, tightly wrapped round either above or more commonly below the breast; the poorer classes veil the bosom with a square of softened skin; the remainder of the dress is a kilt or short petticoat of the same material extending from waist to knee. Maidens never cover the breast, and children are rarely clothed; the infant, as usual in E. Africa, is carried in a skin fastened by thongs behind the parent's back. The favourite ornaments are beads, of which the red coral, the pink, and the "pigeon-egg" are preferred. From the neck depend strings of beads with kiwangwa, disks of shell brought from the coast, and crescents of hippopotamus-teeth, country-made, and when the beard is long it is strung with red and particoloured beads. Brass and copper bangles or massive rings are worn upon the wrists, the forearm bears the ponderous kitindi or coil-bracelet, and the arm above the elbow is sometimes decorated with disks of ivory or with a razor in an ivory étui; the middle is girt with a coil of wire twisted round a rope of hair or fibre, and the ankles are covered with small iron bells and rings of thin iron wire called sambo.† When travelling a goat's horn used as a bugle is secured over the right shoulder by a lanyard and allowed to hang by the left side: in the house men wear a smaller article of the same kind, hollowed inside and containing various articles intended as charms, and given by the Mganga or medicine-man. The arms are slender assegais with the shoulders of the blade rounded off: they are delivered, as by the Somal, after a preliminary of vibratory motion, with the thumb and forefinger, but the people want the force and the dexterity of the Kafirs. Some have large spears for thrusting, and men rarely leave the hut without their bows and arrows, the latter unpoisoned, but curiously and cruelly barbed. They make also the long double-edged knives called sime, and different complications of rungu or knob-kerries, some of them armed with an iron lance-head upon the wooden bulge. Dwarf battle-axes are also seen, but not so frequently as amongst

* In Kinyamwezi the shukkah is called upande or lupande. The white domestic is equivalent to 40, and the indigo-dyed cotton to 30, khete or elbow-lengths of common beads. The word "shukkah" here and in the regions to the west means a double length or 12 feet of cloth, not, as in the Eastern countries, 6 feet.

† The sambo are of thin copper, brass, or iron wire, roughly drawn out from the larger kinds by the African artisan. The material is then neatly twisted round the tail-hairs of bullocks, gnus, and zebras, so as to show nothing but the metal. The chiefs usually wear sambo of a larger size, approaching the thickness of a man's little finger; generally they are but little thicker than knitting-needles. The average market value of these articles is ten for a shukkah. They are worn in masses round the ankles, and are often decorated with shells and beads. At a distance they give the leg all the appearance of elephantiasis.

the eastern races on the Tanganyika Lake. The shield in Unyamwezi resembles that of Usagara ; it is however rarely used.

There are but few ceremonies amongst the Wanyamwezi. A woman about to become a mother retires from the hut to the jungle, and after a few hours returns with a child wrapped in goat-skin upon her back, and probably carrying a load of fire-wood on her head. The medical treatment of the Arabs with salt and various astringents for forty days is here unknown. Twins are not common as amongst the Kafir race, and one of the two is invariably put to death ; the universal custom amongst these tribes is for the mother to wrap a gourd or calabash in skins, to place it to sleep with, and to feed it like, the survivor. If the wife die without issue the widower claims from her parents the sum paid to them upon marriage, if she leave a child the property is preserved for it. When the father can afford it, a birth is celebrated by copious libations of pombe. Children are suckled till the end of the second year. The only education is in the use of the bow and arrow ; about the fourth year the boy begins to learn archery with diminutive weapons, which are gradually increased in strength. Names are given without ceremony ; and as in the countries to the eastward, many of the heathens have been called after their Arab visitors. Circumcision is not practised by this people. The children in Unyamwezi generally are the property not of the uncle but of the father, who can sell or slay them without blame ; in Usukuma or the northern lands, however, succession and inheritance are claimed by the nephews or sisters' sons. The Wanyamwezi have adopted the curious practice of leaving property to their illegitimate progeny by slave-girls or concubines, to the exclusion of their issue by wives ; they justify it by the plea that the son of the bondswoman requires their assistance more than the children of the free-born, who have friends and relatives to aid them. As soon as the boy can walk he tends the flocks ; after the age of ten he drives the cattle to pasture, and, considering himself independent of his father, he plants a tobacco-plot and aspires to build a hut for himself. There is not a boy " which cannot earn his own meat."

Another peculiarity of the Wanyamwezi is the position of the Wahárá or unmarried girls. Until puberty they live in the father's house ; after that period the spinsters of the village, who usually number from seven to a dozen, assemble together and build for themselves at a distance from their homes a hut where they can receive their lovers without parental interference. Their " palaver-house " is in fact an Agapemone in every village. There is but one limit to community in single life : if the mhárá or " maiden " be likely to become a mother, her " young man " must marry her under pain of mulct ; and if she die in childbirth, her father demands a large fine from the lover for having taken his

daughter's life. Marriage is the rule when the youth can afford to pay the price for a wife : it varies according to circumstances from one to ten cows. The wife is so far the property of the husband that he can claim " damages " from the adulterer ; he may not, however, sell her, except when in difficulties. The marriage is celebrated with the usual carouse, and the bridegroom takes up his quarters in his wife's home, not under her father's roof. Polygamy is confined to the wealthy. There is little community of interests and apparently a lack of family affection in these tribes. The husband when returning from the coast laden with cloth will refuse a single shukkah to his wife, and the wife succeeding to an inheritance will abandon her husband to starvation. The man takes charge of the cattle, goats, sheep, and poultry ; the woman has power over the grain and the vegetables ; and both must grow tobacco, having little hope of borrowing from each other. Widows left with houses, cattle, and fields, usually spend their substance in supporting lovers, who are expected occasionally to make presents in return. Hence no coast-slave in Wanyamwezi is ever known to keep a shukkah of cloth.

The usual way of disposing of a corpse in former times was to carry it out on the head and to throw it into some jungle strip where the fisi or hyæna abounds, a custom which accounts for the absence of graveyards. The Wanyamwezi at first objected to the Arabs publicly burying the dead in their fields for fear of pollution ; they would assemble in crowds to close the way against a funeral party. The merchants, however, persevered till they succeeded in establishing a right. When a Mnyamwezi dies in a strange country, and his comrades take the trouble to inter him, they turn the face of the corpse towards the mother's village, a proceeding which shows more sentiment than might be expected from them. The body is buried standing, or tightly bound in a heap, or placed in a sitting position with the arms clasping the knees : if the deceased be a great man, a sheep and a bullock are slaughtered for a funeral feast ; the skin is placed over his face and the hide is bound to his back. When a sultan dies in a foreign land his body is buried upon the spot, and his head or what remains of it is carried back for sepulture to his own country. The chiefs of Unyamwezi generally are interred by a large assemblage of their subjects with cruel rites. A deep pit is sunk, with a kind of vault or recess projecting from it : in this the corpse, clothed with skin and hide, and holding a bow in the right hand, is placed sitting, with a pot of pombe, upon a dwarf stool, whilst sometimes one, but more generally three female slaves, one on each side and the third in front, are buried alive to preserve their lord from the horrors of solitude. A copious libation of pombe upon the heaped-up earth concludes the ceremony. According to the Arabs, the

Wasukuma inter all their sultans in a jungle north of Unyanyembe, and the neighbouring peasants deposit before seed-time small offerings of grain at the Mzimu or Fetiss-house which marks the spot.

The habitations of the eastern Wanyamwezi are the tembe, which in the west give way to the circular African hut; among the poorer sub-tribes the dwelling is a mere stack of straw. The round hut has usually two entrances: the front or doorway is left open by day and is closed at night with a screen of holcus-canæs; the other, called by the Arabs "Bab el Sirr," the secret door, generally placed opposite the adit, is of the same material, carefully barred, and only used when flight is advisable. The best tembe have large projecting eaves supported by uprights: cleanliness, however, can never be expected in them. Having no limestone, the people ornament the inner and outer walls with long lines of ovals formed by pressing the finger tips, after dipping them into ashes and water for whitewash, and into red clay or black mud for variety of colour. With this primitive material they sometimes attempt rude imitations of life—human beings and serpents. In some parts the cross appears, but the people apparently ignore it as a symbol. Rude carving is also attempted upon the massive posts at the entrances of villages, but the figures, though to appearance idolatrous, are never worshipped.* The household furniture of the tembe differs little from that described in the villages of the Wasagara. The large sloping kitanda or bedstead of peeled tree-branch, supported by forked sticks, and provided with a bedding of mat and cowhide, occupies the greater part of the outer room. The triangle of clay-cones forming the hearth is generally placed by the wall-side opposite the front door for light; and the rest of the supplex consists of large stationary bark corn-bins, of gourds and band-boxes slung from the roof, earthen pots of black clay, huge ladles, pipes, grass-mats, grinding stones, and arms hung to a trimmed and branchy tree-trunk planted upright in the ground. The rooms are divided by party walls, which, except when dividing families, seldom reach to the ceiling. The fireplace acts as lamp by night, and the door is the only chimney. In the courtyard are planted tall bolster-like packages of grain neatly covered with grass and reeds; the loom often stands under some shady tree in the centre; the little Mzimu or Fetiss-

* These people are by no means however as skilful as the Kafirs in representing animals. Crosses, circles, points, and lines are also in vogue amongst the S. Africans, who also, like their Eastern brethren, make no attempt to explain them. The Wanyika, near Mombasah, are the only tribes in E. Africa who worship idols, but the practice is shrouded in the deepest mystery. In Central Africa the Londa people under Mwata ya Nvo are said to adore images. The only attempts to portray the human frame were seen amongst the Wazaramo and the Wanyamwezi.

house receives the donations of the pious; and the pigeon-huts shaped like a dwarf habitation are scattered in quiet corners.

The characteristic of the Mnyamwezi village is the "Iwánzá"—a convenience resulting probably from the instinct of the sexes, who, for the greater freedom of life and manners, prefer not to mingle.* Of these buildings there are two in every settlement, generally built at opposite sides, fronting the normal Mrimba-tree,† which sheds its filmy shade over the public courtyard. That of the women, being a species of harem, was not visited; as travellers and strangers are admitted into the male Iwanza, it is more readily described. This "public-house" is a large hut, somewhat more substantial than those adjoining, often smeared with smooth clay, and decorated here and there with broad columns of the ovals before described, and with the prints of palms dipped in ashes and placed flat like the hands in ancient Egyptian buildings. The roof is generally a flying thatch raised a foot above the walls—an excellent plan for ventilation in these regions. Outside, the Iwanza is defended against the incursions of cattle by roughly barked trunks of trees resting upon stout uprights: in this space men sit, converse, and smoke. The two doorways are protected by rude charms suspended from the lintel, hares' tails, zebras' manes, goats' horns, and other articles of prophylactic virtue. Inside, half the depth is appropriated to the ubiri, a huge standing bedframe, formed, like the plank inclines of a civilised guard-room, by sleepers lying upon horizontal cross-bars: these are supported by forked trunks about two feet long, planted firmly in the ground. The floor is of tamped earth. The furniture consists of a hearth and grinding stone; spears, sticks, arrows, and shillelaghs are stuck to smoke in the dingy rafter ceiling, or are laid upon hooks of crooked wood depending from the sooty cross-beams: the corners are occupied by bellows, elephant-spears, and similar articles. Into this public house travellers enter by a kind of right, and the villagers spend their days,—often, even though married—their nights, gambling, eating, drinking pombe, smoking bhang and tobacco, chatting, and sleeping like a litter of puppies destitute of clothing, and using one another's backs, breasts, and stomachs as pillows. The Iwánzá appears peculiar to Unyamwezi.

In Unyamwezi the sexes do not eat together: even the boys would disdain to be seen sitting at meat with their mothers. The men feed either in their cottages or more generally in the Iwánzá: they usually make two meals during the day—a breakfast, which is often omitted for economy, in the morning, and a dinner at about three P.M. During the interim they chew tobacco, and, that failing,

* According to M. Werne, chap. ix., the Dinkas of the White Nile have separate houses for the sexes.

† This tree is the lasab of Oman. It produces a berry which is not eaten.

they indulge in a quid of clay. It probably contains some animal matter, but the chief reason for using it is the necessity to barbarians of whiling away the time when not sleeping by exercising their jaws. They prefer the "sweet earth," that is to say the clay of anthills: the Arabs have tried it without other effects but nausea. The custom, however, is not uncommon upon both coasts of Africa: it takes in fact the place of the mastic of Chios, the kat of Yemen, the betel and toasted grains of India and the farther East, and the ashes of the Somali country. The Wanyamwezi, and indeed the East African tribes generally, have some curious food prejudices. Before their closer intercourse with the Arabs they used to keep poultry, but, like the Gallas and the Somal, who look upon the fowl as a kind of vulture, they would not eat it: even in the present day they avoid eggs. Some will devour animals that have died of disease, and carrion, the flesh of lions and leopards, elephants and rhinoceroses, asses, wild cats and rats, beetles and white ants; others refuse to touch mutton or clean water-fowl, declaring that it is not their custom. The prejudice has not, however, been reduced to a system as amongst the southern tribes of Africa.* They rarely taste meat except upon the march, where the prospect of gain excites them to an unusual indulgence: when a bullock is killed they either jerk the meat or dry it upon a dwarf platform of sticks raised above a slow and smoky fire, after which it will keep for some days. The usual food is the ugali or porridge of boiled flour: they find, however, a variety of edible herbs in the jungle, and during the season they luxuriate upon honey and sour milk. No Mnyamwezi will own to repletion unless he has "sat upon pombe,"—in other words, has drunk to intoxication; and the chiefs pride themselves upon living entirely on beef and stimulants.

The Wanyamwezi have won for themselves a reputation by their commercial industry. Encouraged by the merchants, they are the only professional porters of East Africa; and even amongst them, the Wakalaganza, Wasumbwa, and Wasukuma are the only tribes who regularly visit the coast in this capacity. They are now no longer "honest and civil to strangers"—semi-civilisation has hitherto tended to degradation. They seem to have learned but little by their intercourse with the Arabs. Commerce with them is still in its infancy. They have no idea of credit, although in Karagwah and the northern kingdoms payment may be

* Almost all these families have some proscribed food which they will not eat for fear of their teeth dropping out and other calamities occurring. Capt. Owen (vol. ii.) calls the forbidden articles by the general name "motupo." Some such anomalies exist among all Eastern people. The Arabs of Unyanyembe, for instance, relish zebra's flesh; no one, however, will be persuaded to taste a drop of donkey's milk.

delayed for a period of two years. They cannot, like some of their neighbours, bargain : a man names the article which he requires, and if it be not forthcoming he will take no other. The porters, who linger upon the coast or in the island of Zanzibar, either cut grass for asses, carry stones and mortar to the town, for which they receive a daily hire of from two to eight pice, or they obtain from the larger landholders permission to reclaim and cultivate a plot of ground with vegetables and manioc. They have little of the literature, songs and tales, common amongst barbarians ; and though they occasionally indulge in speeches, they do not, like many kindred tribes, cultivate eloquence. On the march they beguile themselves with chanting for hours together half a dozen words eternally repeated. Their language is copious but confused, and they are immoderately fond of simple and meaningless syllables used as interjections.* Their industry is confined to weaving coarse cloths of unbleached cotton,† neatly woven baskets, wooden milk-bowls, saddle-bags for their asses, and arms. They rear asses and load them lightly when travelling to the coast, but they have never learned to ride them. Though they carefully fence and ditch their fields, they have not invented a plough, confining themselves to ridging the land with the laborious hoe. They rarely sell one another, nor do they greatly encourage the desertion of slaves. The wild bondsman when running away is sometimes appropriated by his captor, but a Muwallid or domestic slave is always restored after a month or two. The Arabs prefer to purchase men sold under suspicion of magic ; they rarely levant, knowing that their countrymen will put them to death.

As has been said, the government of Unyamwezi is conducted by a multitude of petty chiefs. The ruling classes are thus called : Mtemi or Mwáme is the chief or sultan, Mgáwe (in the plural Wágáwe) the principal councillor, and Mánácháro or Mnyapara (in the plural Wányápárá) the elder. The ryots or subjects on the other hand are collectively styled Wasensi. The most powerful chiefs are Fundikira of Unyanyembe, Masanga of Msene, and Mbogo of Kirira. The dignity of Mtemi is hereditary. He has power of life and death over his subjects, and he seldom condescends to any but mortal punishment. His revenue is composed of additions to his private property by presents from travellers, confiscation of

* The affirmative, for instance, is expressed by "e, en"—the negative by "han ! han," with abundant nasalization. Again, "oo-oo !" denotes disgust, and "hee-ee-ee !" indefinitely prolonged and pronounced violently, extreme astonishment or displeasure. "Eigh! eigh !" also signifies wonder ; "ah ! ha !" a pretty business ! and so on. These curious grunts have often been remarked by travellers amongst the Kafir tribes.

† In early times, we are informed by Barrow, a Dutch expedition was sent from the Cape northward in search of a nation that were reported to wear linen clothing. Linen, however, is unknown in the interior, and upon this line the only weavers of cotton were the Wanyamwezi.

effects in cases of felony or magic, by the sale of subjects, and by treasure trove. Even if a man kill his own slave, the slave's effects lapse to the ruler. The villagers must give up all ivory found in the jungles, although the hunters are allowed to retain the tusks of slaughtered animals.

A few brief remarks concerning Fundikira, the chief of Unyamwezi in 1858, may serve to illustrate the condition of the ruling class in Unyamwezi. This chief was travelling towards the coast as a porter in a caravan, when he heard of his father's death : he at once staked his load and prepared to return and rule. The other porters, before allowing him to depart, handled him severely, exclaiming, partly in jest, partly in earnest, "Ah ! now thou art still our comrade, but presently thou wilt torture and slay, fine and flog us."* Fundikira proceeding to his native country inherited as is the custom all his father's property and widows : he fixed himself at Ititenya, presently numbered ten wives, who have borne him only three children, built 300 houses for his slaves and dependants, and owned 2000 head of cattle. He lived in some state, declining to call upon strangers, and, though not demanding, still obtaining from them large presents. Becoming obese by age and good living, he fell ill in 1858, and as usual his relations were suspected of compassing his end by uchawi, or black magic. In these regions the death of one man causes many. The Mganga was summoned to apply the usual ordeal. After administering a mystic drug he broke the neck of a fowl, and splitting it into two lengths inspected the interior. If blackness or blemish appear about the wings, it denotes the treachery of children, relations, and kinsmen ; the backbone convicts the mother and grandmother ; the rump shows that the criminal is the wife, the thighs the concubines, and the injured shanks or feet the other slaves. Having fixed upon the class of the criminals, they are collected together by the Mganga, who after similarly dosing a second hen throws her up into the air above the heads of the crowd and singles out the person upon whom she alights. Confession is extorted by tying the thumb backwards till it touches the wrist or by some equally cruel mode of question. The consequence of condemnation is certain and immediate death ; the manner of which is chosen by the Mganga. Some are speared, others are beheaded or clubbed to death : a common way is to bind the cranium between two stiff pieces of wood which are gradually tightened by cords till the brain bursts out from the sutures. For women they practise a peculiarly horrible kind of impalement. These atrocities continue until the chief recovers or dies : at the commencement of his attack eighteen souls, men and women, in

* Similarly, we are told, the rulers of S. Guinea were soundly abused by their subjects for the last time on election-day.

one household had been destroyed ; should his illness be protracted, scores will precede him to the grave, for the Mchawi or magician must surely die.

The Wanyamwezi will generally sell their criminals and captives ; when want drives they part with their wives, their children, and even their parents. For economy they import their serviles from Ujiji and the adjoining regions ; from the people lying towards the south-east angle of the Tanganyika Lake, as the Wafipa, the Wapoka, and the Wagara ; and from the Nyanza races, and the northern kingdoms of Karagwah, Uganda, and Unyoro.

CHAPTER VII.

THE FIFTH REGION : THE VALLEY OF UVINZA AND UJIJI UPON THE TANGANYIKA LAKE.

THE fifth region includes the alluvial valley of the Malagarazi River, which subtends the lowest spurs of the highlands of Karagwah and Urundi, the western prolongation of the chain which has obtained, probably from African tradition, the name of "Lunar Mountains." In length it extends from the Malagarazi Ferry in E. long. $31^{\circ} 10'$, to the Tanganyika Lake in E. long. 30° : the breadth, from s. lat. $3^{\circ} 14'$, the supposed northern limit of Urundi, to s. lat. $5^{\circ} 2'$, the parallel of Ukaranga, is a distance of 108 rectilinear geographical miles. To a region of such various elevations it is difficult to assign an average of altitude : the heights observed by thermometer were never more than 1850 feet.

This country contains in due order from east to west the lands of the Wavinza, the Wabuha, and the Wajiji ; on the northern edge is Uhha, and on the south-western extremity, Ukaranga. The general features of the country are those of the alluvial valleys of the Kingani and the Mgeta Rivers. The soil in the vicinity of the stream is a rich brown or black humus, rank with vegetable decay. This fertile strip varies in breadth from one to five miles ; it is mostly desert, but not sterile, on the right bank of the river ; on the left it affords an aspect of luxuriant cultivation. The northern boundary is a line of hill-spurs of primitive formation, rough with stones and yawning ravines ; in many places the projections assume the form of green "dog's-tails" or "neat's-tongues," projecting like lumpy ridges into the card-table level of the river valley southwards. Each mound-like spur is crowned with a tuft or clump, principally mimosas and bauhinias ; and often a lone spreading and towering tree, a borassus or a calabash, ornamenting the extreme point, forms a landmark for the caravan. The sides of these hills, composed of hornblende and gneissic rock,

quartzite, quartz grit, and ferruginous gritstone, are steep, rugged, and thickly wooded, and one slope generally reflects the other,—if muddy, muddy; and if stony, stony. Each "hanger," or wave of ground, is divided from its neighbour by a soft sedgy valley, bisected by a network of stagnant pools. Here and there are nullahs, with high stiff earthbanks for the passage of rain torrents. The grass stands in lofty screens, and the path leads over a matted mass of laid stalks which cover so closely the thick mud that laden asses do not sink: this vegetation is burned down during the hot season, and a few showers bring up an emerald crop of young blades sprouting phoenix-like from the ashes of the dead. The southern boundary of the valley is more regular: in the eastern parts is an almost tabular wall of rock, covered even to the crest with shrub and tree, which displays magnificent spectacles of conflagration after a few weeks of drought.

As is proved by the regular course of the Malagarazi River, the westward decline of the country is gentle: along the road, however, the two marches nearest to the Tanganyika Lake appear to sink more rapidly than those preceding them. The main drain receives from the northern hill-spurs a multitude of tributaries which convey their surplus moisture into the great central reservoir.

Under the influence of the two great productive powers in tropical nature—heat and moisture—the wondrous fertility of the soil, which puts forth where uncleared a rank jungle of nauseous odour, renders the climate dangerous. The rains divide the year into two unequal portions of eight and four months, namely, the wet monsoon, which commences with violence in September and ends in May, and the dry hot weather which rounds off the year. The showers fall, as in Zanzibar, uncontinuously, with breaks varying from a few hours to several days; unlike those of Zanzibar, they are generally accompanied by violent discharges of electricity. Lightning from the north, especially at night, is considered a sign of approaching foul weather. It would be vain to seek in these regions of Central Africa the kaskazi and kosi, or regular north-east and south-west monsoons, those local modifications of the trade-winds which may be traced in regular progress from the centre of Equatorial Africa to the Himalayas. The atmospheric currents deflected from the Atlantic Ocean by the coast radiation and by the arid and barren regions of Southern Africa are changed in hygrometric condition, and are compelled by the chilly and tree-clad heights of the Tanganyika Lake, and by the low, cold, and river-bearing plains lying to the westward, to part with the moisture which they have collected in the broad belt of extreme humidity lying between the Ngami Lake and the equator.* When the land has been thoroughly saturated, the cold, wet wind, driving

* About Ngami the rainy season ends in March and April.

cloud masses, surcharged with electricity, sets continually eastward, to restore the equilibrium in lands still reeking with the torrid blaze, and where the atmosphere has been rarified by from four to six months of burning suns. At Msene, in Western Unyamwezi, the rains break about October; thence the wet monsoon, resuming its eastward course, crosses the Land of the Moon, and, travelling by slow stages, arrives at the coast in early April. Following the northing sun, and deflected to the north-east by the rarified atmosphere from the hot, dry surface of the Eastern Horn,* the rains reach Western India in June, and exhaust themselves in frequent and copious downfalls upon the southern versant of the Himalayas. The gradual refrigeration of the ground, and the southing of the sun, produce in turn the inverse process, namely, the north-east monsoon. About the Tanganyika, however, all is variable. The large body of water in the Central Reservoir preserves its equability of temperature, while the alternations of chilly cold and potent heat, in the high and broken lands around it, cause extreme irregularity in the direction of the currents. During the wet monsoon of 1858 the prevalent winds were constantly changing: in the mornings there was almost regularly a cool north breeze drawn by the water from the heights of Urundi; in the course of the day it varied round towards the south. The most violent storms came up from the south-east and the south-west, and as often against as with the gale. The long and rigorous wet monsoon, broken only by a few scattered days of heat, renders the atmosphere exceedingly damp, and it is succeeded by a burst of sunshine which dries the grass to stubble in a few days. Despite these extremes, the climate of Ujiji has the reputation of being comparatively healthy; it owes this probably to the refreshing coolness of the nights and mornings. The mkunguru, or seasoning-fever of this region, is not feared by strangers as that of Unyanzembe, yet no one expects to escape it. It is a low bilious and aguish type, lasting from three to four days: during the attack perspiration is induced with difficulty, and it often recurs at regular times once a month.

From the Malagarazi Ferry many lines traverse the desert on the right or northern bank of the river, which is preferred to the southern, whence the Wavinza exclude travellers. Before entering this region caravans generally combine so as to present a formidable front to possible foes. The trunk road, called Jambeho, which is the most southerly of the northern routes, will be described in detail; in a future page the Ubuha, or most northerly line, will be briefly alluded to.

* In the Somali country the rains fall but sparingly; and though the clouds sailing afar are descried at Aden, the wet monsoon is unknown there, probably on account of the tornados of wind attracted by the high temperature of the place, and heated by the stony formation.

From Mpete, on the right bank of the Malagarazi, nine stages conduct the caravan to Ukaranga or Ujiji on the borders of the Tanganyika Lake. Want of provisions and danger from freebooters cause travellers to hurry over this line; they generally, however, expend a day in crossing the Malagarazi River from Ugaga, the last station on the left, to Mpete, the first on the right side of the stream.

The Malagarazi, corrupted by geographers into "Mdjidiji,"* into "Magrassie,"† and into "Magozi,"‡ has been wrongly determined to issue from the Tanganyika Lake. According to all travellers it rises in the mountains of Urundi, at no great distance from the Kitangure, or river of Karagwah. But while the latter, springing from the northern counterslope, feeds the Nyanza Lake, the Malagarazi, arising in the southern slope, trends to the south-east, till entangled in the decline of the great Central Depression it sweeps round the southern base of Urundi, and deflected westwards disembogues into the Tanganyika. The mouth is in the land of Ukaranga, and the long promontory behind which it discharges its waters is distinctly visible from Kawele, the head-quarter settlement in Ujiji. The Malagarazi is not navigable. As in primary and transition countries generally, rapids abound upon it. Beyond the ferry the bed becomes more inclined, branch and channel islands of sand and verdure divide the stream, and, as every village near the banks appears to have one or more canoes, it is probably unfordable. The main objection to crossing on foot over the broader and shallower parts near the rock-bars, may be the multitude and the daring of the crocodiles.

The ferry-boats upon the Ugaga line—described by the Arabs of Kazeh as fine barges, capable of accommodating from 50 to 60 passengers—are miserable "Baumrinden" canoes: two strips of myombo bark, from 5 to 7 feet in length, sewn together, like a double wedge, with fibres of the same tree, into a narrow keel, and elevated at the bow and stern, which are sharp as those of a racing-wherry. They are prevented from collapsing by cross-bars—rough sticks, about 18 inches long—jammed ladder-wise between the two sides. The passenger holding on to the gunwale, with his knuckles wetted,—the weight of two men causes them to float only three or four inches above water,—and his legs ankle-deep, sits upon an extra sheet of stiff bark in the stern. The boatman, standing amidships

* This un-euphonious appellation appears in the 'Mombas Mission Map.'

† Mr. Macqueen, 'On the Geography of Central Africa,' p. 118. "From Sanga (Usanga) in eighteen days they came to Ogara (Ugara), where there is a large river called Magrassie (Malagarazi), having passed Gunda (Ugunda), Shisha (Ushisha), Sanga (Usange), and Sangosi (Usangozi)." Moreover, in page 119 we read, "The river Magrassie has its origin in the lake."

‡ Mr. Cooley, 'On the Geography of N'yassi,' was made to confound the "Magozi" (Malagarazi), "a great river at Ogara (Ugara), with the Matoney (*i.e.* Mtoni, any river) or the Swaha," a misprint or corruption of Rwaha, the upper bed of the Rufiji. Concerning this curious error see Chap. II.

or in the fore, poles or paddles according to the depth of the stream. He is skilful in managing his craft, and he threads without difficulty the narrow, grass-grown, and winding veins of deep water which ramify from the main trunk over the swampy and rushy plains on both sides. The crazy craft must be baled out after every trip. Merchandise, however, is rarely lost or much injured, though trifling accidents sometimes occur as the canoe bumps against the landing-places,—mere breaches in the earth-bank worn down by passing caravans. The ferrymen show considerable decision in maintaining their claims. On the appearance of opposition they pole off to a distance, and sit quietly to await the effect of their manœuvre. It is not prudent to step out of the canoe before arriving at its destination : the boatman will exercise his ingenuity to land his passenger upon some dry mound in deep water, and will then demand a second fee for rescuing him.

Travellers are dissuaded from delaying at Mpete (the Passage or Ferry ?),* a malarious district, haunted, like the river-banks generally, by mosquitoes that bite even during the day-time. There are, however, some fine large kraals of dry grass, and sometimes of mkora or of myombo-bark,† crowning the woody eminences above the valley, where the insects are less troublesome. When these encampments are burned down, a shady tree is the only place of bivouac. The first station on the Jambeho, or southern road, is called Kinawani, from a district on the left or opposite bank of the river, which belongs to Sultan Mzogera. It occupies 5 h. 20 m. The route traverses swampy ground along the stream for a short distance. It then stretches over jungly and wooded hill-spurs, with steep rough ascents and descents, divided from other elevations by slippery mire-runs. The encamping ground is close to the right bank of the Malagarazi ; it supplies a large kraal in a space cleared of the thick, fetid, and marescent vegetation. Those who cannot find lodging must encamp in the deadly bush. A small store of provisions, generally grain and sweet potatoes, may be purchased from the villagers of Kinawani, who flock over to the passing fair. They are, however, fanciful in their requirements : beads—especially the coral and porcelain—iron-wire, salt, and meat.

From Kinawani to the Jambeho district the march of about 7 hours is generally divided by caravans. The first portion, leaving the river to the southwards, crosses rugged and rolling

* The word appears to be a form of Lupata, a glen or ghaut in the language of the African Portuguese travellers.

† During the masika or rainy monsoon the best encampments are made of bark sheets, stripped by cutting two rings round the trunk at a distance of six to seven feet; a perpendicular slit then connects them; the bark is easily peeled off, and the tree, after having been left for time to season, is felled for use.

ground, divided by deep swamps of mire and grass. After 5 h. 20 m. it descends to a large kraal, situated near a reach where the violent turbid stream foams over a discontinuous ledge of rock between avenues of dense and tangled jungle. The conclusion of the march, after spanning broken ground encumbered with forest and cut with swamps, runs under hills on the right hand and falls into the marshes and fields of the river valley. Villages of small bird-nest huts and carefully-hoed fields of grain and sweet potato upon the southern bank affect the sight, after the dreary monotony of a jungle march, like the discovery of land after a long sea voyage.

The district of Jambeho, one of the most flourishing in Uvinza, was governed, in 1858, by Sultan Ruwere. The chief demands a honga of 8 to 10 cloths for permitting merchants to purchase provisions. The village ferry is instantly put into requisition when a caravan appears. Supplies are rarely procurable during the dry season. After the rains, sweet potatoes—the favourite food of the Wavinza—are cheap and plentiful, and even poultry may be purchased for about twice its proper value. Travellers often halt for a day or two at Jambeho, despite the dangerous miasma and the mosquitoes of the river valley.

From Jambeho to the deserted saltpans of the Rusugi River, the fourth station, is a march of 5 h. 15 m., including the passage of the stream. The path leads down a decline, gradually falling westward through dense growths of grass and shrub upon the right bank of the Malagarazi; then, diverging from the main stream, it passes over the brow of a low tree-clad hill, above the junction of the Rusugi, and follows the left bank of the tributary as far as the nearer ford. The Rusugi, which drains the northern highlands south-westward into the Malagarazi, runs through a bottom of red ochreish soil, which after rain becomes so slippery as to cause frequent falls; it is deeply cut with narrow watercourses, which, coming from elevated ground, easily fill. In February of 1858, during the rainy season, the Rusugi was about 100 yards in breadth, with a strong stream flowing breast-deep; it was divided by a branch islet of sand and gravel. At the Rusugi the road separates into a northern and a southern branch, a hill-spur forming the line of demarcation.* The northern strikes

* The northern line numbers the following seven stations to Kawele in Ujiji:—

1. From Jambeho to Parugerero, 2 hours.
2. " Parugerero " the Jungle, 8 "
3. " Jungle " Jungle, 6 "
4. " Jungle " Ubuha, 8 "
5. " Ubuha " Jungle, 4 "
6. " Jungle " Ruche Riv., 6 "
7. " Ruche Riv. " Kawele, 2 "

These stations may be briefly described. Parugerero is a village of Wavinza, containing from 40 to 50 beehive huts, tenanted by salt-diggers. The principal pan

off to Parugerero, on the left bank, where a shallower ford is found; the southern line crosses the Rusugi River at the branch islet: thence, ascending the grassy rise on the right of the stream, it sinks into a muddy swamp, climbs a rocky and bushy ridge, and abuts at a small comfortless kraal-ground upon the western slopes. From this point to the regions immediately upon the lake the land is desert and provisions are unprocurable.

From the old salt-pans of the Rusugi River to the Ruvu stream is a long march of 8 hours, generally divided into two by caravans, the only guide to the length of the march being the amount of fatigue which the porters can endure. Descending from the ridge upon which the kraal is placed, the route crosses a deep swamp of black mud, dotted, in elevated places, with pits where broken pottery and blackened lumps of clay still evidence traces of human handiwork. Beyond this lowland the track strikes off from the river valley, and, turning to the right, falls into toilsome ground. Deep and rocky ravines, with luxuriant vegetation above, and with rivulets trickling at the bottom towards the Malagarazi, must be crossed by scrambling down and swarming up the roughest steps of block, boulder, and knotted tree-root. The woody and stony hills beyond this ascent, with their steep and slippery inclines, are divided by half-a-dozen waters, all more or less troublesome to cross. Caravans usually encamp, for safety and convenience, in the bush, upon some rocky hill where the neighbouring descent supplies water, whilst the valleys of the Rusugi River nurture herds of the mbogo, or Bos Caffer, which forms a welcome addition to rapidly shrinking rations.

The complement of the march is the normal mixture of jungly and stony "neats' tongues," divided by deep and grassy swamps, stagnant in the dry weather, and draining, after rains, the northern country to the Malagarazi River. An unfordable rivulet, hemmed in by a dense and fetid thicket, is crossed by a felled trunk: cattle are summarily pushed down the deep and slippery banks. A foul

is sunk in the left bank of the river, and belongs to three sultans. The saline produce, after being boiled down in the huts, is piled up and hand-made into little cones. Sold for one shukkah per masuta or half-load, and far superior to the bitter nitrous produce of Ugogo, it finds its way throughout the heart of Africa, supplying the tribes of both the Tanganyika and the Nyanza Lakes; and it constitutes the principal source of wealth to the Wavinza. At the ford of Parugerero the Rusugi flows waist-deep over a rocky uneven bed: here also ends the rough, stony, and rolling ground of Eastern Uvinza.

Between the second and third stations the road crosses the Ruhumba and another large nullah, whose high, stiff earth-banks, crowned with thick verdure, are rendered troublesome by steep and slippery approaches. In this part the country is alternately hilly and swampy, with high grass, thick bush, and a scattered vegetation of borassus and calabash, mimosas and thorns, wild arrowroot, bamboos, and spear-grass. The fourth station is in the land of the Wabuhs, a tribe alluded to at the end of this chapter. During the fifth march the Ruche River is twice forded: in the dry season its breadth varies from 20 to 30 feet.

swamp of black mud thence leads to the Ruguvu or Luguvu River, the western boundary of Uvinza and the eastern limit of Ukaranga. This narrow stream can be forded only in the dry season. After rains it spreads over a broad expanse of grassy plain, and the central channel must be rebridged with branching trees, if the former works have been demolished for firewood. The encamping ground is a mud-bank thinly veiled with forest; and the country is dreaded by caravans, who seldom enter Ujiji without some appalling details of murder or battle, in which some slave was perhaps slain.

The seventh march, which occupies 4 h. 40 m., leads from the Ruguvu to the Unguwwe (Uvungwe?) River, over a desert country exactly similar to the stage last traversed. The stream which runs through Eastern Ukaranga is shallow, muddy, and, as usual, girt in by dense vegetation. A fine kraal is generally found upon the left bank.

From the Unguwwe River to the borders of the Tanganyika Lake, the long march of 14 hours is distributed over three and even four days by the caravans, who, though weary and half-famished, still love to linger over the end of an expedition. After fording the Unguwwe begins the weary toil of fighting through tiger and spear grass, with reeds, rushes, a variety of ferns before unseen, and other gigantic growths, clothing a succession of rolling hills. The paths are broken, slippery, and filled with deep holes. In the jungles are extensive clumps of bamboo and rattan, the former small, the latter of poor quality; the mpingu or bauhinia and the salsaparilla vine abound; wild grapes of the smallest size and the austerest flavour appear for the first time upon the hill-sides,* and in the lower swamps plantains grow almost wild. Though no sign of human habitation here meets the eye, scattered fields and plantations evidence the fact that man is near. On the path, where the ground lies exposed to view, a conglomerate of ferruginous red clay, suggesting a resemblance to the superficies of Western Londa, as described by Dr. Livingstone, takes the place of the granite and sandstones of the eastern countries, and the sinking of the land towards the lake is palpable. In parts the ground is broken up into small deep hollows, from which spring pyramidal masses of the hugest trees. Sweet water abounds in deep courses of black mud, and these, when crossed, sorely try the sinews of laden man and beast. But the troubles of the road are lightly borne; already in the far distance appear walls of sky-blue cliff, which, with their sun-gilt summits, are as beacons to the distressed mariner.

* The vine is of dwarf dimensions, and the fruit ripens after the monsoon. According to the Arabs, two varieties of the grape-vine are indigenous to Uayamwezi. Dr. Livingstone (chap. xxx.) mentions wild grape-vines as abundant everywhere along the banks of the Zambezi.

The ninth march conducts the traveller to Ukaranga, on the borders of the lake. The path, traversing gigantic grasses, like those of the last stage, enters an open forest, and debouches upon a small clear savannah. An upper road leads N.W. by N. over the Ruche River to Kawele, in Ujiji. The southern line, whose direction is W. by S., turns off to the left, and breasts a high and rugged hill, part of the eastern wall of the Tanganyika. Ascending by the deep tracks of stony watercourses and threading a straggling forest, the traveller tops the crest, and suddenly descires, through the feathery foliage of the trees below him, first glimpses of a prospect which, after the close jungle and the monotonous features of the scenery left behind, fill him with admiration, wonder, and delight.

Nothing, indeed, can be more picturesque than this first view of the Tanganyika Lake, as it lies basking in the gorgeous tropical sunshine. Beyond a short foreground of rugged and precipitous hill-fold, down which the footpath painfully zigzags, a narrow flat of emerald green shelves gently towards a ribbon of glistening yellow sand, here bordered by sedgy rushes, there clear and cleanly cut by the breaking wavelets. Farther in front stretches an expanse of the lightest and softest blue, varying from 30 to 35 miles in breadth, and sprinkled by the east wind with crescents of snowy foam: it is bounded on the other side by tall and broken walls of purple hill, flecked and capped with pearly mist, or standing sharply pencilled against the azure air. To the south, and opposite the "cynosura," or long low point, behind which the Malagarazi River discharges the red loam suspended in its violent stream, lie the high bluff headlands and capes of Uguhha, and, as the eye dilates, it falls upon little outlying islets, speckling a sea-horizon. Villages, cultivated lands, and the frequent canoes of the fishermen, and, at a nearer approach, the murmur of the waves breaking upon the shore, give a something of life, of variety, of movement, to the scenery, which, like all the beauties in these regions, wants but a little of the neatness and finish of Art, contrasting with the profuse magnificence and the wondrous lavishness of Nature, to rival, if not to excel, the most admired prospects of classical regions. These riant shores, and the broad open prospect of this vast crevasse, appear doubly charming to the traveller after the silent and spectral mangrove-creeks on the Eastern main, and his melancholy monotonous experience of jungle scenery, tawny rocks, and sun-parched plains, or rank herbage, and flats of black mire. The Tanganyika Lake is seen, however, to most advantage from the high ground: upon its bosom the sight wearies with the unvarying tintage—all shining green and vivid blue—whilst continuous parallels of lofty hill, like the sides of a huge trough, close the prospect, and suggest an idea of confinement.

The district of Ukaranga extends from the Unguwwe River to

the waters of the lake: on the south it is bounded by the region of Ut'hangwe, and on the north by the Ruche River. This small and sluggish stream is about 40 yards in breadth near the mouth, and, being unfordable at all seasons, two or three ferry-boats always ply upon its waters. The rauque bellow of the hippopotamus is heard on its banks, and the adjacent lowlands are infested by mosquitoes in clouds. The villages of Ukaranga are scattered in clumps over the plain—wretched hamlets, where a few households exist surrounded by rare cultivation in the drier parts of the swamps. The Sultan Mnya Mtázá, who demands black-mail, lives, as is customary amongst the Lakist chiefs, in the adjoining hills. The "port of Ukaranga" is an open roadstead, which seldom shows even a single canoe. In 1858 the settlement consisted of a few miserable grass huts, used as a temporary shelter by caravans passing to and from the island of Kasenge, and clustering round a single tembe, built by Hamid bin Sulayyam, an Arab trader. Merchants who possess boats and can send for provisions to the islands across the lake sometimes prefer, for economy, Ukaranga to Kawele; it is also made a halting place by those en route to Ugubha, who would lose time by visiting Ujiji. The land, however, affords no supplies; a bazar is unknown; and the apathetic tribe, who cultivate scarcely sufficient grain for themselves, will not even take the trouble to cast a net. Ukaranga sends bamboos, rafters for building, and fire-wood, cut in the background of highlands, to Kawele and other parts of Ujiji, at which places, however, workmen must be hired.

Ukaranga signifies, etymologically, the "Land of Ground-nuts."^{*} This little district may, in earlier ages, have given name to the Mocarangas, Mucarongas, or Mucarangas, a nation which, according to the Portuguese historians, from João dos Sanetos (in 1586-97) to Don Sebastian Xavier Botelho (in 1835),[†] occupied the country within the Mozambique from the 5th to the 25th degree of S. lat., under subjection to the sovereign and the people of "Monomotapa."[‡] In the absence of native history, ana-

* The U is the causal prefix denoting the region, and Karanga is the name in Central Africa for the Njugu ya Nyássá, the ground-nut of Zanzibar, which abounds in these regions. Mr. Cooley ('Geography of N'yassi,' p. 27) remarks—"The national name ('Monomoezi'), or, perhaps, the general denomination of the race and language, is, as was stated by Nasib, Mucaranga, that is to say, 'Ranga man.'" This derivation is wholly inadmissible: Mkaranga can mean nothing but an inhabitant of Ukaranga. See Chap. IX.

† Senhor Botelho, formerly Governor of the Mozambique, published the following passage (in his 'Memoria Estatística sobre os Dominios Portuguezes na África Oriental.' Lisboa, 1835):—"Monomotapa is divided into an eastern and a western empire; the latter, which is the more considerable, contains eight kingdoms—Corrouro-Medra, Moundjão (Uhiao), Macoco, Tourgeno, Gingir-Bomba, Manemongess (Unyamwezi), Rouenga, and Bororo."

‡ This popular misnomer is explained by Dr. Livingstone (chap. xxx.) to have arisen from the title and name of a chief, Mwene Motipe.

logy is the only guide. Either, then, the confusion of the Tanganyika and the Nyassa Lakes by the old geographers caused them to extend the "Mocarangas" up to the northern water—and the grammatical error in the word "Mucaronga" justifies some suspicion as to their accuracy—or in the space of three centuries the tribe has declined from its former power and consequence, or the Wakananga of the Tanganyika are a remnant of a mighty southern nation, which, like the Watuta and other tribes, has been pressed by adverse circumstances to the north. Though Senhor Botelho, in his 'Memoria Estatica,' denominates the "Monomoezi country" "Western Mucarauga," it is certain that no Mnyamwezi in the present day owns to connection with a tribe speaking a different dialect, and distant about 200 miles from his frontier.

The roadstead of Ukaranga is separated from Ujiji by the mouth of the Ruche, in a deep hollow bay, whose chord from north-west to south-east is from 5 to 6 miles long. The strip of shelving plain between the mountains and the lake, raised but a few feet above the water-level, and converted by the passage of a hundred drains from the eastern highlands into a sheet of sloppy and slippery mire, breast-deep in select places, supports with difficulty a few wretched inhabitants. Drenched with violent showers and thick clammy dews, it is rife in fevers, and is feared on account of its crocodiles and hippopotami. In the driest season the land road is barely practicable; during and after the rains the lake affords the only means of passage.*

The little voyage of three hours from Ukaranga to Kawele or Ujiji is beautified by the picturesque and varied forms, and the glowing and gorgeous tints of the mountains around the lake. An unpleasant surprise, however, awaits the traveller, who, having read of and believed in "die Stadt Ujiji," expects to find a large town inhabited by Arab settlers, with extensive slave depots and plantations of rice.† As, coasting along the eastern shore, and passing the low, muddy, and grass-grown mouth of the Ruche River, he nears his destination, a few scattered hovels of miserable construction appear dotted upon the banks, surrounded by fields of sorghum and sugar-cane, and shaded by dense groves of the dwarf plantain, and the tall, sombre Guinea palm. In vain the eye seeks for the features which usually announce the vicinity of a large and busy port. Presently the hippopotamus and the crocodile shrink timidly from exposure, and a few hollowed logs, the monoxyles of the fishermen, wood-cutters, and market people, either

* For the use of a boat and crew to Kawele, at most three hours' row, the slaves of an Arab merchant demanded from the Expedition 45 cloths. When it was humbly explained to them that the canoe, sailors, and all would scarcely fetch in the bazar half that price, they consented to receive ten cloths and two kitundi, each worth from two to four shukkah.

† See "Mombas Mission Map."

cleave the waters or stand drawn up on the patches of yellow sand. The craft is then poled through a hole in a thick welting of coarse reedy grass and aquatic plants, to a level landing-place of fine shingle, where the water shoals off rapidly. Around this primitive "ghaut" rise a few scattered huts, in the humblest beehive shape. Advancing a few hundred yards, the traveller passes through a relic of Arab civilization—the "Bazar"—a raised and cleared plot of ground, flanked by a crooked tree, in thick grass, where, between 10 A.M. and 3 P.M., a mass of standing and squatting negroes buy and sell, barter and exchange, with a hubbub heard for miles, and where not unfrequently a spear or dagger thrust brings on a skirmishing faction-fight. About a mile distant from the lake lies the little village of Kawele, with its hovels barely protruding above the dense vegetation. It is preferred by caravans on account of the abundance of its supplies, its central position, and the comparatively open country behind—a wide gap in the hill-curtain surrounding the Tanganyika. The only tembe, or square house, existing in 1858 was built by an Arab merchant, Hamid bin Salim, who allowed it, however, to be tenanted by slaves and ticks. The Sultan Kannena, a man of servile origin, is by no means popular. He succeeded, in 1858, to Sultan Kabeza, who, to the regret of the Arabs, died, leaving but one boy.

To the westward of the Kawele village lies the district of Gungu, broken ground facing the islet rock Bangwe. This place was deserted by travellers on account of the plundering propensities of its former chief. His son, "Lurinda," however, labours to recover lost ground by courtesy and attention to strangers. South-eastwards of Kawele is the district of Ugoyye, frequented by the Arabs, who find the Sultans Habeyya and Marabu somewhat extortionate than their neighbours. It is a sandy spot, clear of white ants, but shut out by villages and cultivation from the lovely view of the lake. To one standing at Kawele all these districts and villages are within 2 or 3 miles, and a distant glance discloses the possessions of half-a-dozen independent tribes.

Caravans entering Ujiji from the land side usually encamp in the outlying villages on the right or left bank of the Ruche, at considerable inconvenience, for some days. The origin of this custom appears to date from olden time. In East Africa, as a rule, every stranger is held to be hostile before he has proved friendly intentions, and many tribes do not admit him into their villages without a special invitation. Thus, even in the present age, the visitor in the countries of the Somal and Galla, the Wamasai and the Wakwafi, must sit under some tree outside the settlement till a deputation of elders, after formally ascertaining his purpose, escort him to their homes. The modern reason for the custom, which

prevails upon the coast, as well as on the banks of the Tanganyika, is rather commercial than political. The caravan halts upon neutral ground, and the sultans or chiefs of the different villages send select messengers carrying various presents: in the interior ivory and slaves, and in the maritime regions cloth and provisions, technically called "Magubiko," and intended as an earnest of their desire to open trade. Sweet words and fair promises win the day; the Mtongi, or head of the caravan, after a week of earnest deliberation with all his followers, chooses his host, temporary lodgings are provided for the guests, and the value of the retaining fees is afterwards recovered in hongá and kirembá — blackmail and customs. This custom was known in Southern Africa by the name of "marts;" that is, a "connection with a person belonging to another nation, so that they reside at each other's houses when visiting the place, and make mutual presents."* The guest amongst the Arabs and the Somal is called "Nezil."

At Ujiji terminates, after 12 stages, which native caravans generally accomplish in a fortnight, the transit of the fifth region. The traveller has now accomplished a total number of 85 long, or 100 short stages, which, with necessary rests, but excluding detentions and long halts, occupy 150 days. The direct longitudinal distance from the coast is 510 geo. miles, which the sinuosities of the road prolong to 955 statute miles. The total number of days expended by the Expedition in actual marching was 100, of hours 420, which gives a rate of 2·27 miles per hour. In practice Arab caravans seldom arrive at the Tanganyika, for reasons before alluded to, under a total period of six months.†

* "Travels in S. Africa," by the Rev. John Campbell. London Missionary Society, 1822. Vol. i., chap. xxiii.

† Dapper ("Beschryving van Afrika," Amst., 1671) asserts that the "blacks of Pombo" (*i.e.* the Pombeiros, or native travellers of W. Africa), when asked respecting the distance of the lake, say that it is at least a 60-days' journey, going constantly eastwards." But the total breadth of the continent between Mbuamaji and Loanda being, in round numbers, 1560 geographical miles, this estimate would give a marching rate of 17 geographical and rectilinear miles (or, allowing for deviation, 26 statute miles) per diem. When Do Couto (1565), quoting the information procured by Francisco Barreto, during his expedition in 1570, from some Moors (Arabs or Wassahili) at Patta and elsewhere, says that "from Kilwa or Atondo (that is to say, the country of the Watondui) the other sea of Angola might be reached with a journey of 15 or 20 (150 or 200?) leagues," he probably alludes to the Nyassa Lake, lying south-westwards of Kilwa, not to the Tanganyika. Mr. Cooley gives one itinerary, by Mohammed bin Nasur, an Arab merchant, enumerating 71 marches from Buromaji (Mbuamaji) to Oha (Uhha), and a total of 83 from the coast to the lake; and a second by a native of Monomoezi, Lief bin Said (a misprint for Khalaf bin Said?), 62 to Ogara (Ugara), four or five days from Oha. In another page he remarks that "from Buromaji, near Point Pana, to Oha (Uhha) in Monomoezi is a journey of 79, or, in round numbers, 80 days, the shores of the Lake being still six or eight days distant." This is the closest estimate yet made. Mr. Macqueen, from the itinerary of Lief bin Said estimates the lake, from the mouth of the river Pangani, at 604 miles, and 71 days of total march. It is evident that these African authorities

Ujiji—also called Manyofo, which appears, however, peculiar to a certain sultanat or district—is the name of a province, not, as has been represented, of a town. It was first visited by the Arabs about 1340; ten years after that they had penetrated to Unyamwezi; they found it conveniently situated as a mart upon the Tanganyika Lake, and a central point where their depots might be established, and whence their factors and slaves could navigate the waters, and collect captives and ivory from the tribes upon its banks. But the climate proved unhealthy, the people dangerous,* and the coasting voyages frequently ended in disaster: Ujiji, therefore, never rose to the rank of Unyanyembe or Msene. At present it is visited during the fair season, from May to September, by flying caravans, who return to Unyanyembe as soon as they have loaded their porters.

The land of Ujiji is bounded on the north by the mountains of Urundi, and on the south by the Ukaranga country; eastward it extends to Ubuha, and westward it is washed by the waves of the Tanganyika Lake. On the north-east lies the land of Uhha, now reduced by the predatory Watuta to a luxuriant desert.

Abundant humidity and a fertile soil, evidenced by the large forest trees and an abundance of ferns, render Ujiji the most productive province in this section of Africa: vegetables, which must elsewhere be cultivated, here seem to flourish almost spontaneously. Rice of excellent quality was formerly raised by the Arabs upon the shores of the Tanganyika; it grew luxuriantly, attaining, it is said, the height of 8 or 9 feet. The inhabitants, however, preferring sorghum, and wearied out by the depredations of the monkey, the elephant, and the hippopotamus, have allowed the more civilized cereal to degenerate. The principal grains are the holcus and the Indian nagli or nanchui (*Eleusine coracano*); there is no bajeri (*panicum* or millet) in these regions; the pulses are phaseoli and the voandzeia, groundnuts, beans, and haricots of several different species. The manioc, egg-plant, and sweet-potato, the yam, the cucumber, an edible white fungus growing subterraneously, and the Indian variety of the Jerusalem artichoke,† represent the vegetables. Sugar-cane, tobacco, and cotton are always purchasable in the bazar. The

have hitherto confounded the Nyanza, the Tanganyika, and the Nyassa Lakes. Still, in the estimate of the distance between the coast and Ujiji there is a remarkable and a most deceptive coherence.

* In May, 1858, two slaves belonging to the caravan of an Arab merchant, Said bin Majid, were speared at Ujiji—one in the market-place openly, the other at night by a housebreaker, detected in flagrant delict. None of the merchants passing through during that year dared to sleep in their huts without a strong watch. The clothes belonging to the Jemadar attached to the Expedition were stolen almost from under him by a housebreaker at night.

† In India called "Guignon," the roots of a white arum, somewhat resembling the Jerusalem artichoke, but almost without flavour.

fruits are the plantain and the Guinea-palm. The mdizi or plantain is apparently an aborigen of these latitudes: in certain parts, as in Usumbara, Karagwah, and Uganda, it is the staff of life: in the hilly countries there are, it is said, about a dozen varieties, and a single bunch forms a load for a man. It is found in the island and on the coast of Zanzibar, at Khutu in the head of the alluvial valley, and even more rarely in the mountains of Usagara. The best fruit is that grown by the Arabs at Unyanyembe: it is still a poor specimen, coarse and insipid, stringy and full of seeds, and strangers rarely indulge in it, fearing flatulence. Upon the Tanganyika Lake there is a variety called "mikono t'hembu," or "elephant's-hands," which is considerably larger than the Indian "horse-plantain." The skin is of a brickdust red, in places inclining to rusty-brown; the interior is a dull yellow, with black seeds, and the flavour is harsh, strong, and drug-like. The *Elæis Guinæensis*, locally called mchikichi, which is said by the Arabs to grow in the islands of Zanzibar and Pemba, and more rarely in the mountains of Usagara, springs apparently uncultivated in large dark groves on the shores of the Tanganyika, where it hugs the margin, rarely growing at any distance inland. The bright-yellow drupe, with shiny purple-black point, though nauseous to the taste, is eaten by the people. The mawezi or palm-oil, of the consistency of honey, is rudely extracted, and forms an article of considerable traffic in the regions about the lake.* Despite its sickly flavour, it is universally used in cooking, and it forms the only unguent and lamp-oil in the country. This fine palm is also tapped, as the date in Western India, for toddy; and the cheapness of this tembo—the sura of West Africa—accounts for the prevalence of intoxication, and the consequent demoralisation of the Lakist tribes.†

The bazar at Ujiji is well supplied. Fresh fish of various kinds ‡ is always procurable except during the violence of the rains: the people, however, invariably cut it up and clean it out before bringing it to market. Good honey abounds after the wet monsoon. By the favour of the chief milk and butter may be purchased every day. Long-tailed sheep and well-bred goats, poultry and eggs—the two latter are never eaten by the people—are brought in from the adjoining countries: the Arabs breed a few Manilla ducks, and the people rear but will not sell pigeons.

* This is the celebrated palm-oil, whose various officinal uses in Europe have already begun to work a social reformation in W. Africa. The people of Ujiji separate, by pounding, the oily sarcocarpium from the one seed of the drupe, boil it for some hours, allow the floating substance to coagulate, and collect it in large earthen pots. The price is usually about one doti of white cotton for thirty-five pounds, and the people generally demand salt in exchange for it from caravans. This is the "oil of a red colour" which, according to Mr. Cooley, is bought by the Wanyamwezi "from the opposite or south-western side of the lake."

† The article is described in Chap. XIV.

‡ See Chap. VIII.

The few herds at Ujiji which have escaped the beef-eating propensities of the Watuta are a fine breed, originally, it is said, derived by the Wahha from the mountains of Karagwah. Their horns in these lands appear unusually large; their stature combines with the smallness of the hump to render them rather like English than Indian or African cattle. They are rarely sold in these days, except for enormous prices, an adult slave being the lowest valuation of a cow. The cattle is never stalled or grain-fed, and the udder is little distended; their produce is about one quarter that of a civilized cow, and they give milk only during the few first months after parturition. The "tulchan" of Tibet is apparently unknown in Central Africa; but the people are not wanting in barbarous contrivances to persuade a stubborn animal to yield her produce.

The fauna appear rare upon the borders of the Tanganyika: all men are hunters; every human being loves animal food, from white ants to elephants; and probably the luxuriance of the vegetation, in conjunction with the extreme humidity, tends to diminish species and individuals. Herds of elephants are found in the bamboo jungles which surround the sea, but the mass of ivory sold in the markets of Ujiji is collected from an area containing thousands of square miles. Hippopotami and crocodiles are common in the waters, wild buffaloes in the plains. The hyenas are bold thieves, and the half-wild "Pariah-dogs" that slink about the villages are little inferior to them as predators. The people sometimes make pets of these curs, leading them about with strings; but they do not object to see them shot after a raid upon the Arab's meat, butter, or milk. These animals are rarely heard to bark; they leave noise to the village cocks. The huts are as usual haunted by the grey rat and the musk-rat. Of birds there is a fine fish-eagle, about the size of a domestic cock, with snowy head and shoulders relieving a sombre chocolate plume: he sits majestically watching his prey upon the tall trees overhanging the waves of the Tanganyika. A larus, or sea-gull, with reddish legs, lives in small colonies upon this lake. At the end of the monsoon in 1858 they were seen to collect in troops upon the sands, as they are accustomed to do at Aden when preparing to migrate. The common kingfisher is a large bird with a white and grey plume, a large and strong black bill, and a crest which somewhat resembles that of the Indian bulbul: it perches upon the branches over the waters, and in flight and habits resembles other halcyons. A long and lank black plotus, or diver, is often seen skimming the waters, and sandpipers run along the yellow sands. The other birds are white-breasted crows, partridges, and quails seen in Urundi; swallows in passage, curlews, motacillæ, muscicapæ, and various passerines. Ranæ, some of them noisy in the extreme, inhabit the sedges close to the lake. The termite does great damage in the sweet red soils

about Kawele : it is less feared where the ground is dry and sandy. The huts are full of animal life—snakes, scorpions, ants of various kinds, whose armies sometimes turn the occupants out of doors ; the rafters are hollowed out by xylophagous insects ; the walls are riddled by mason-bees, hideous spiders veil the corners with thick webs, the chirp of the cricket is heard both within and out of doors, cockroaches destroy the provisions, and large brown mosquitoes and flies, ticks and bugs, assault the inhabitants.

The rise in price of slaves and ivory has compelled the Arabs, as will be seen in the next chapter, to push their explorations beyond the Tanganyika Lake. Ujiji is, however, still the great slave-mart of these regions, the article being collected from all the adjoining tribes of Urundi, Uhha, Uvira, and Marungu. The native dealers are so acute, that they are rapidly ruining this their most lucrative traffic. They sell cheaply, and think to remunerate themselves by aiding and abetting desertion. Merchants, therefore, who do not chain or cord together their gangs till they have reached the east bank of the Malagarazi River, often lose 20 per cent. The prevalence of the practice has already given Ujiji a bad name, and, if continued, it will remove the market to another place, where the people are somewhat less sharp and more sensible. It is impossible to give any idea of the average price of the human commodity, which varies, under the modifications of demand and supply, from 2 to 10 doti or double shukkah of American domestics. Yet as these purchases sell in Zanzibar for at least 14 or 15 dollars per head, the trade realises nearly 500 per cent., and will, therefore, be put down with difficulty.

The principal tribes in this region are the Wajiji, the Wavinza, the Wakaranga, the Watuta, the Wabuha, and the Wahha.

The Wajiji are a burly race of barbarians, far sturdier than the tribes hitherto traversed, with dark skins, plain features, and straight, strong limbs : they are larger and heavier men than the Wanyamwezi, and the type, as it approaches Central Africa, becomes rather negro than negroid. Their feet and hands are large and flat, their voices are harsh and strident, and their looks as well as their manners are independent even to insolence. The women, who are held in high repute, resemble, and often excel, their masters in rudeness and violence : they think little of entering a stranger's hut in their cups and of snatching up and carrying away an article which excites their admiration. Many of both sexes and all ages are disfigured by the small-pox—the Arabs have vainly taught them inoculation—and there are few who are not afflicted by boils and various eruptions ; there is also an inveterate pandemic itch, which, according to their Arab visitors, results from a diet of putrid fish.

This tribe is extensively tattooed, probably as a protection

against the humid atmosphere and the chills of the Lake Region. Some of the chiefs have ghastly scars raised by fire, in addition to large patterns marked upon their persons—lines, circles, and rays of little cupping-cuts drawn down the back, the stomach, and the arms, like the tattoo of the Wangindo tribe near Kilwa. Both sexes love to appear dripping with oil ; and they manifestly do not hold cleanliness to be a virtue. The head is sometimes shaved ; rarely the hair is allowed to grow ; the most fashionable coiffure is a mixture of the two ; patches and beauty-spots in the most eccentric shapes—buttons, crescents, and galeated lines—being allowed to sprout either on the front, the sides, or the back of the head, from a carefully-scraped scalp. Women as well as men are fond of binding a wisp of white tree-fibre round their heads, like the ribbon which confines the European wig. There is not a trace of mustachio or whisker in the country ; they are removed by the tweezers, and the climate, according to the Arabs, is unfavourable to beards. For cosmetics both sexes apply, when they can procure such luxuries, red earth to the face, and over the head a thick coating of chalk or mountain-meal, which makes their blackness appear hideously grotesque.

The chiefs wear expensive stuffs, checks, and cottons, which they extract from passing caravans. Women of wealth affect the tobe or coast dress, and some are seen to wear red and blue broad-cloths. The male costume of the lower orders is confined to softened goat, sheep, deer, leopard, or monkey skins, tied at two corners like a little apron passed over the right or the left shoulder, with the flaps open at one side, and with tail and legs dangling in the wind. Women who cannot afford cloth use as a succedaneum a narrow kilt of fibre or skin, and some were seen with a tassel of fibre or a leafy twig depending from a string bound round the waist, and displaying the nearest approach to the original fig-leaf. At Ujiji the people are observed, for the first time, to make extensive use of the macerated tree-bark, which supplies the place of cotton in Urundi, Karagwah, and the northern kingdoms. This article, technically called “mbugu,” is made from the inner bark of various trees, especially the mrimba* and the mwale.† The trunk of the full-grown tree is stripped of its integument twice or thrice, and is bound with plantain-leaves till a finer growth is judged fit for manipulation. This bark is carefully

* See Chap. VI.

† The mwale is the huge raphia alluded to in Chap. II. Its midrib is used for building huts : the fibres of the leaves, locally called mondo, are steeped, bruised, and made into lines for threading beads, and into strings for the zeze or guitar ; in Uruwwa and the northern kingdoms the people make of them a fine stuff, somewhat like the grasscloth imported from Bukini, or Northern Madagascar, into Zanzibar, and fetching there four dollars per piece. In Ujiji and Urundi light arrows are cut out of the midrib of the mwale.

removed, steeped in water, macerated, kneaded, and pounded with clubs and battens to the consistency of a coarse cotton. Palm-oil is then spirted upon it from the mouth, and it acquires the colour of chamois-leather. The Wajiji obtain the mbugu mostly from Urundi and Uvira. They are fond of striping it with a black vegetable mud so as to resemble the spoils of leopards and wild cats, and they favour the delusion by cutting the edge into long strips, like the tails and other extremities of wild beasts. The price of the mbugu varies according to size from six to twelve khete or strings of beads. Though durable, it is never washed; after many months' wear the superabundance of dirt is removed by butter or ghee.

Besides the common brass* girdles and bracelets, armlets and anklets, masses of white porcelain, blue glass, and large "pigeon-egg" beads, and hundreds of the iron-wire circlets called sambo, worn with ponderous brass or copper rings round the lower leg, above the foot, the Wajiji are distinguished from tribes not on the lake by necklaces of shells—small pink bivalves strung upon a stout fibre. Like their Lakist neighbours, they ornament the throat with disks, crescents, and strings of six or seven cones, fastened by the apex, and depending to the breast. Made of the whitest ivory or of the teeth, not the tusks, of the hippopotamus, these dazzling ornaments effectively set off the shining dark skin. Another peculiarity amongst these people is a pair of iron pincers or a piece of split wood ever hanging round the neck; nor is its use less remarkable than its presence. The Lakists rarely chew, smoke, or take snuff according to the manner of the rest of mankind. Every man carries a little half-gourd or a diminutive pot of black earthenware, nearly full of tobacco; when inclined to indulge, he fills it with water, expresses the juice, and from the palm of his hand snuffs it up into his nostrils. The pincers serve to close the exit, otherwise the nose must be corked by the application of finger and thumb. Without much practice it is difficult to articulate during the retention of the dose, which lasts a few minutes, and when an attempt is made the words are scarcely intelligible. The arms of the Wajiji are small battle-axes and daggers, spears, and large bows, which carry unusually heavy arrows. They fear the gun and the sabre, yet they show no unwillingness to fight. The Arabs avoid granting their demands for muskets and gunpowder, consequently a great chief never possesses more than two or three fire-arms.

The Wajiji are considered by the Arabs to be the most troublesome race upon this line of road. They are taught, by the example of their chiefs, to be rude, insolent, and extortionate; they

* The Wajiji have learned to make brass from the Arabs by melting up one-third of zinc imported from the coast with two parts of the fine soft and red copper brought from the country of the Kazembe.

demand beads even for pointing out the road ; they will deride and imitate a stranger's speech and manner before his face ; they can do nothing without a long preliminary of the fiercest scolding ; they are as ready with a blow as with a word ; and they may often be seen playing at "rough and tumble," fighting, pushing, and tearing hair in their boats. The Wajiji draw dagger or use spear upon a guest with little hesitation. They think twice, however, before drawing blood which will cause a feud. Their roughness of manner is dashed with a curious ceremoniousness. When the Sultan appears amongst his people he stands in a circle and claps his hands, to which all respond in the same way. Women curtsey to one another, bending the right knee almost to the ground. When two men meet they clasp each other's arms with both hands, rubbing them up and down, and ejaculating for some minutes "Nama sanga ? nama sanga ?—art thou well ?" They then pass the hands down to the forearm, exclaiming "Wákhe ? wákhe ?—how art thou ?" and finally they clap palms at each other—a token of respect which appears common to these tribes of Central Africa. The children have all the frowning and unprepossessing look of their parents ; they reject little civilities, and seem to spend life in disputes, biting and clawing like wild cats. There appears to be little family affection in this undemonstrative race. The only endearment between father and son is a habit of scratching and picking each other, caused probably by the prevalence of a complaint before alluded to ; as amongst the Simiads, the intervals between pugnacity are always spent exercising the nails. Sometimes, also, at sea, when danger is near, the Mjiji breaks the mournful silence of his fellows, who are all thinking of home, with the exclamation, "Yá mgúri wángé !—O my wife !" The prevalence of the Fracastorian evil speaks little for their morals. They are never sober when they can be drunk ; perhaps in no part of the world will the traveller more often see men and women staggering about the village with thick speech and violent gestures. The favourite inebriate is tembo or palm-toddy ; almost every one, however, even when on board the canoe, smokes bhang, and the whooping and screaming which follow the indulgence resemble the noise of wild beasts rather than the sounds of human beings. Their food consists principally of holcus, manioc, and fish, which is rarely eaten before it becomes offensive to European organs.

The great Mwami or Sultan of Ujiji in 1858 59 was Rusimba. Under him were several mutware (mutwale) or minor chiefs, one to each settlement, as Kannena in Kawele and Lurinda in Gungu. On the arrival of a caravan, Rusimba forwards, through his relations, a tusk or two of ivory, thus mutely intimating that he requires his blackmail, which he prefers to receive in beads and kitindi, proportioning, however, his demand to the trader's

means. When this point has been settled, the mutwarc sends his present, and expects a proportionate return. He is, moreover, entitled to a fee for every canoe hired ; on each slave the kiremba or excise is about half the price ; from one to two cloths are demanded upon every tusk of ivory ; and he will snatch a few beads from a man purchasing provisions for his master. The minor chiefs are fond of making "sare" or brotherhood with strangers, in order to secure them in case of return. They depend for influence over their unruly subjects wholly upon personal qualifications, bodily strength, and violence of temper. Kannena, the chief of Lawele, though originally a slave, has "won golden opinions" by his conduct when in liquor : he assumes the most ferocious aspect, draws his dagger, brandishes his spear, and, with loud screams, rushes at his subjects as with the intention of annihilating them. The affairs of the nation are settled by the Mwami, the great chief, in a general council of the lieges, the wateko (in the singular mteko) or elders presiding. Their intellects, never of the brightest, are invariably fuddled with toddy, and, after bawling for hours together and coming apparently to the most satisfactory conclusion, the word of a boy or of an old woman will necessitate another lengthy palaver. The sultans, like their subjects, brook no delay in their own affairs ; they impatiently dun a stranger half-a-dozen times a day for a few beads, while they patiently keep him waiting for weeks on occasions to him of the highest importance, whilst they are drinking pombe or taking leave of their wives. Besides the magubiko or preliminary presents, the chiefs are bound, before the departure of a caravan which has given them satisfaction, to supply it with half-a-dozen masuta or matted packages of grain, and to present the leader with a slave, that generally manages to abscond. The parting gifts are technically called "urangozi" or guidance.

The Wajiji showed the dark side of their character to the East African Expedition. Vexed by the refusal to trade for ivory and slaves, they declared that such "merchants"—the highest dignity in these lands—lived as it were for nothing ; and they sent repeated and peremptory messages to depart, which were as peremptorily rejected. The customary fees were offered to them and received. As, however, they could not defraud by sale, they insisted upon supplying canoes, and upon rationing and remunerating the crews ; when other pretexts failed, they brought forward the charge of magic—a never-failing instrument of annoyance in the hands of the African. Though overpaid for milk, they would refuse it with insolence, declaring that the operation of boiling it or of converting it into cheese bewitched their cows. When boats are hired an Arab pays, besides rations, one cloth to each boatman and 10 per cent. upon merchandise ; for a single passenger the fare is one kitindi or coil-bracelet. The price of a canoe varies ac-

cording to size from four to ten farasilah (each 35 lbs.), here equivalent to about the same weight of common beads, white or blue porcelain. For two canoes, hired to navigate the northern third of the Tanganyika, the Sultan Kannena demanded and received thirty-three kitindi, forty-nine doti or double cloths, four fundo (each ten strings) of the samesame or expensive coral beads, thirty-six khete or single strings of the blue glass known as mzizima, and seventy-four fundo of khanyera or white, and ukuti wa mnazi or green porcelains. Besides rations laid in before leaving Ujiji, he demanded on the voyage three tobe and ninety-two fundo of beads, he clamoured for the purchase of sheep and goats, and he fraudulently increased the honga or blackmail of the Lake chiefs. Moreover, to suit the convenience of his people, he over-manned the canoes, placing in the larger thirty-three and in the smaller twenty-two men besides passengers, slaves, and animals. But the European members of the expedition were wholly in his hands; the Baloch escort declined to accompany them upon their perilous voyage; and a false report concerning a river issuing from the northern extremity of the Tanganyika had determined them to visit the spot at all risks. The Wajiji never could reconcile themselves to "merchants" who had come to see and not to buy; and the Expedition owed perhaps its immunity from an "avanie" to the fact that at the time of its departure the Sultan Kannena was prostrated by low fever, the effect of his immoderate potations.

The Wajiji have, under the influence of slavery, made no progress in the science of commerce. They know nothing of bargaining or of credit; they will not barter unless the particular medium upon which they have set their hearts is forthcoming; and they fix a price proportioned to their wants, not to the value of the article. The market varies with the number of caravans present at the dépôt, with the season, the extent of supply, and a variety of similar considerations. Besides the trade in ivory, slaves, bark, cloth, and palm-oil, they manufacture and hawk about iron sickles shaped like the European, "kengele," "kiugi," or small bells, and sambo, or wire circlets, worn as ornaments round the ankles, "Sime"—locally called tambi—long double-edged knives in wooden sheaths, neatly whipped with strips of rattan; and jembe, or hoes. Of bells a dozen were purchased in March and April of 1858 for 2 fundo of white beads. Jembe and large Sime averaged also 2 fundo. Of good sambo 100, and of the inferior quality 200, were procurable for a fundo. The iron is brought in a rough state from Uvira. The value of a goat was 1 shukkah, which here represents, as in Unyamwezi, 12 feet, or double the length of the shukkah in other regions, the single cloth being called lupande, or upande. Sheep, all of a very inferior quality, cost somewhat more than goats. A hen, or from five to six eggs, is bought for 1 khete

of samesame, or red coral beads, here worth three times the quantity of white porcelain. Large fish, or those above 2 lbs. in weight, are sold for 3 khete; the small fry—the white-bait of this region—1 khete per 2 lbs.; and diminutive shrimps 1 khete per 3 lbs. Of plantains, a small bunch of 15, and of sweet potatoes and yams from 10 to 15 roots, are purchased for a khete; of artichokes, egg-plants, and cucumbers, from 50 to 100. The wild vegetables generically called mboga are the cheapest of these esculents. Beans, phaseoli, ground-nuts, and the voandzeia, are expensive, about 2 lbs. per khete. Rice is not generally grown in Ujiji; a few measures of fine white grain were purchased at a fancy price from one Sayfu bin Hasani, a pauper Msawahili from the isle of Chole, settled in the country. The sugar-cane is poor and watery; it is sold in lengths of 4 or 5 feet for the khete; one cloth and two khete purchased 3 lbs. of fine white honey. Tobacco is comparatively expensive. Of the former a shukkah procured a bag weighing perhaps 10 lbs. Milk was sold at fancy prices, averaging about three teacups for the khete. A shukkah will purchase 3 lbs. of butter, and ghee is not made for the market. It was impossible to buy sweet toddy, as the Wājiji never smoke nor clean the pots into which it is drawn. Of the acid and highly intoxicating drink used by the people, from five to six teacups are procurable for a khete. Firewood, being imported, is expensive, a khete being the price of a little faggot containing from 50 to 100 sticks. About 1 lb. of uncleaned cotton is to be purchased for 3 khete of samesame. It must be observed, that this list of prices, which represents the market at Kawele, gives a high average, many of the articles being brought in canoes from considerable distances, and even from the opposite coast.

The traveller in the Lake Regions loses by cloth; the people, contented with softened skins and tree-bark, prefer beads, ornaments, and more durable articles: on the other hand, he gains upon salt, which is purchased half-price at the Parugerero pans, and upon large wires brought from the coast. Beads are a necessary evil to those engaged in buying ivory and slaves. In 1858 the Wajiji rejected with contempt the black porcelains, called ububu. At first they would not receive the khanyera, or white porcelains; and afterwards, when the Expedition had exchanged, at a considerable loss, a large stock for langiyo, or small blues, they demanded the former. The bead most in fashion was the mzizima, or large blue glass, three khete or strings of which were equivalent to a small cloth; the samesame, or red corals, required to be exchanged for mzizima, of which one khete was an equivalent to three of samesame. The maguru nzige, or pink porcelains, were at par. The tobacco-stem bead, called sofi, and current at Msene, was in demand. In exchanging others for this

variety, the merchant loses considerably when by wear or accident the single pieces, called masaro, have diminished in size. The reader will excuse the prolixity of these wearisome details; they are necessary parts of a picture of manners and customs in Central Africa. Moreover, a foreknowledge of the requirements of the people is a vital condition of successful exploration. There is nothing to arrest the traveller's progress in this section of the African interior except the failure of his stores.

A serious inconvenience awaits the inexperienced, who find a long halt at, and a return from, Ujiji necessary. The Wanyamwezi pagazi, or porters, hired at Unyanyembe, bring with them the cloth and beads which they have received as hire for going to and coming from the lake, and they lose no time in bartering the outfit for ivory or slaves. Those who prefer the former article will delay for some days with extreme impatience and daily complaints, fearing to cross Uvinza in small bodies when loaded with valuables. The purchasers of slaves, however, knowing that they will inevitably lose them after a few days at Ujiji, desert at once. In all cases, the report that a caravan is marching eastwards causes a general disappearance of the porters. As the Wajiji will not carry, the caravan is reduced to a halt, which may be protracted for months, in fact, till another body of men coming from the east will engage themselves as return-porters. Moreover, the departure homewards almost always partakes of the nature of a flight, so fearful are the strangers lest their slaves should seize the opportunity to desert. The Omani Arabs obviate these inconveniences by always travelling with large bodies of domestics, whose interest it is not to abandon the master. They also wisely discourage the African's proclivity for "levanting," by refusing to hire pagazi who have run away. The coast Arabs, and the Wasawahili, on the other hand, ignore this point of commercial honour, and shamelessly offer a premium to deserters. Warned of this inconvenience, the porters attached to the E. African Expedition were for the most part paid at Unyanyembe only as far as the lake; their slaves and ivories also were placed under surveillance. These measures did not, however, prevent 25 men deserting in a single night.

South of the Wajiji lie the Wakaranga, a people previously described as almost identical in development and condition, but somewhat inferior in energy and civilization. Little need be said of the Wavinza, who appear to unite the bad qualities of both the Wanyamwezi and the Wajiji. They are a dark, meagre, and ill-looking tribe; poorly clad in skin aprons and kilts. They keep off insects by inserting the chauri, or fly-flap, into the waistband of their kilts; and at a distance present, like the Hottentots, the appearance of a race with tails. Their arms are spears, bows, and arrows; and they use, unlike their neighbours, wicker-work

shields 6 feet long by 2 in breadth. Their chiefs are of the Watosi race: hence every stranger who meets with their approbation is called, in compliment, Mtosi. They will admit caravans into their villages, dirty clumps of beehive huts; but they refuse to provide them with lodging. Merchants with valuable outfits prefer the jungle, and wait patiently for provisions brought in baskets from the settlements. They seldom muster courage to attack a caravan, but stragglers are in imminent danger of being cut off by them. Their country is rich in cattle and poultry, grain and vegetables. Bhang grows everywhere near the settlements, and they indulge themselves in it immoderately.

The Watuta—a word of fear in these regions—are a tribe of robbers originally settled upon the southern extremity of the Tanganyika Lake. After plundering the lands of Marungu and Ufipa, whose cattle they almost annihilated, the Watuta migrated northwards, rounding the eastern side of the lake. Some years ago they were called in by Ironga, the late Sultan of U'ungu,* to assist him against Mui' Gumbi, the powerful chief of the Warori. The latter were defeated, after obstinate fighting for many months. After conquering the Warori, the Watuta settled in Sultan Ironga's lands, rather by might than right, and they were expelled by his son with the greatest difficulty. From U'ungu their next step was to the southern bank of the Malagarazi River. About three years ago this restless tribe was summoned by Mzogera, the present Sultan of Uvinza, to assist him in seizing Uhha, which had just lost T'háre, its chief. The Watuta crossed the Malagarazi, laid waste the lands of Uhha and Ubuha, and desolated the northern region between the river and the lake. Shortly afterwards they attacked Msene, and were only repulsed by the matchlocks of the Arabs after a week of hard skirmishing. In the early part of 1858 they slew Ruhembe, the Sultan of Usui, a district north of Unyanyembe, upon the road to Karagwah. In the latter half of the same year they marched upon Ujiji, plundered Gungu, and proceeded to attack Kawele. The valiant Kannena and all his men fled to the mountains. The Arab merchants, however, who were then absent on a commercial visit to Uvira, returned precipitately to defend their dépôts, and with large bodies of slave-musketeers beat off the invader. The lands of the Watuta are now bounded on the north by Utumbara, on the south by Msene; eastwards by the meridian of Wilyankuru, and westwards by the highlands of Urundi.

The Watuta, according to the Arabs, are a pastoral tribe, despising, like the Wamasai and the Somal, such luxuries as houses and fields; they wander from place to place, camping under trees,

over which they throw their mats, and driving their herds and plundered cattle to the most fertile pasture-grounds. The dress is sometimes a mbugu or bark-cloth; more generally it is confined to the humblest tribute paid to decency by the Kafirs of the Cape, and they have a similar objection to removing it. On their forays they move in large bodies, women as well as men, with the children and baggage placed upon bullocks, and their wealth in brass wire twisted round the horns. Their wives carry their weapons, and join it is said in the fight. The arms are two short spears, one in the right hand, the other in the left, concealed by a large shield, so that they can thrust upwards unawares: disdaining bows and arrows, they show their superior bravery by fighting at close quarters, and they never use the spear as an assegai. In describing their tactics the Arabs call them "Ashab hiyal" or manoeuvrers. Their thousands march in four or five extended lines, and attack by attempting to envelop the enemy. There is no shouting or war-cry to distract the attention of the combatants: iron whistles are used for the necessary signals.* During the battle the Sultan or chief, whose ensign is a brass stool, sits attended by his forty or fifty elders in the rear; his authority is little more than nominal, the tribe priding itself upon autonomy. The Watuta rarely run away, and take no thought of their killed and wounded. They do not, like the ancient Jews and the Gallas and Abyssinians of the present day, carry off a relic of the slain foe; in fact, the custom seems to be ignored south of the equator. The Watuta have still however a wholesome fear of firearms, and the red flag of the caravan causes them to decamp without delay. According to the Arabs they are not inhospitable, and though rough in manner they have always received guests with honour. A fanciful trait is related concerning them: their first question to a stranger will be "Didst thou see me from afar?"—which, being interpreted, means, Did you hear of my greatness before coming here?—and they hold an answer in the negative to be a *casus belli*.

Remain for consideration the people of Ubuha and Uhha. The Wabuha form a small and insignificant tribe bounded on the north by Uhha, and on the south by the Malagarazi River: the total breadth is about three marches; the length, from the Rusugi stream of the Wavinza to the frontiers of Ujiji and Ukaranga, is a distance of four days. Their principal settlement is Uyonwa, the district of Sultan Mariki: it is a mere clearing in the jungle, with a few pauper huts dotting fields of sweet potatoes. This harmless and oppressed people will sell provisions, but though poor they are

* Similarly the Kafirs give signals to their cattle when at a distance with small whistles made of the bone of some animal.

particular upon the subject of beads, preferring the coral and blue to the exclusion of black and white. They are a dark, curly-headed, and hard-favoured race: they wear the shushah or top-knot of hair, dress in skins and tree-barks, ornament themselves with brass and copper armlets, ivory disks, and beads, and are never without their weapons, spears and assegais, daggers, and small battle-axes. Honourable women wear tobes of red broad-cloth and fillets of grass or fibre confining the hair.

Uhha, written by Mr. Cooley Oha,* was formerly a large tract of land bounded on the north by the mountains of Urundi, southwards and eastwards by the Malagarazi River, and on the west by the northern parts of Ujiji. As has been recounted, the Wahha scattered by the Watuta have dispersed themselves over the broad lands between Unyanyembe and the Tanganyika, and their fertile country, well stocked with the finest cattle, has become a waste of jungle. A remnant of the tribe, under Kanoni, their present Sultan, son of the late T'háre, took refuge in the highlands of Urundi, not far from the principal settlement of the mountain-king Mwezi: here they find water and pasture for their herds, and the strength of the country enables them to beat off their enemies. The Wahha are a comparatively fair and a not uncomely race; they are however universally held to be a vile and servile people; according to the Arabs they came originally from the southern regions, the most ancient seat of slavery in E. Africa. Their Sultans or chiefs are of Wahinda or princely origin, probably descendants from the regal race of Unyamwezi.† Wahha slaves sell dearly at Msene; an adult male costs from 5 to 6 doti merkani, and a full-grown girl 1 gorah merkani or kaniki.

CHAPTER VIII.

THE TANGANYIKA LAKE.

THE Tanganyika Lake, though in the heart of Africa, and hitherto unvisited by Europeans, has a history of its own, extending through more than three centuries.

"Accounts of a great sea in the interior of Africa obtained (probably from native travellers) at Congo and Sofala," reached the

* 'Geography of N'yassi,' p. 23.—"The king of the last-named country (Oha) is the sovereign of the Monomoezi. From the last town in Oha to the nearest shores of the lake is a distance of four days." The distance is correct. The Wahha, however, as will be seen, never gave a sovereign to Unyamwezi, nor exercised sway over its chiefs, although their ruler is of royal race. In 'Inner Africa Laid Open,' p. 59, we read that Mohammed bin Nasur, of Zanzibar, calls the King of Oha "Tári," or the lion. But "T'hare" is a mere proper name.

† For other details concerning the Wahinda, or princely race, see Chap. IX.

Portuguese settlements on both sides of that continent.* In the Decades of De Barros (first printed in 1552) substantially correct details, such as the length, 100 leagues, the capability of navigation, and the one large island, are curiously intermingled with theoretical conclusions, which make the Nile, the Zaire, the Manisa, and other great rivers issue from its bosom. Subsequently, Pigafetta (1591), writing upon the authority of Portuguese inquirers, affirms that there is but one lake (the Nyassa) on the confines of Angola and Monomotapa, but that there are two lakes (the Nyassa and the Tanganyika), not lying east and west, as was supposed by Ptolemy of Alexandria, but north and south of each other, and about 400 miles asunder, which give birth to the Nile. From that epoch dates the origin of our modern misconceptions concerning the Lake region of Central Intertropical Africa. The Nyassa and the Tanganyika were now blended,† then separated, according to the theories or the information of the geographer; no explorer ventured to raise from the land of mystery the veil that invested it; and the "Mombas Mission" added the colophon by confounding, with the old confusion, the Nyanza or Ukerewe, a third lake, of which they had heard at Mombasah and elsewhere. It is not wonderful then that Dr. Vincent suspected the existence or the place of the Central Lake, or that the more ignorant popularizers of knowledge confounded the waters of the Nyassa and the Ngami.‡

* Mr. Cooley's 'Geography of N'yassi,' p. 1. The following extracts from Portuguese history in these pages are entirely taken from that learned work, which wanted nothing but a foundation of fact. The geographer's principal informant, in 1834, was one Khamisi Wá Tani, civilised into Khamis bin Osman, a Msawahili, from Lamu, who, having visited the Nyassa Lake, pretended that he had travelled to the shores of the Tanganyika. A sufficient proof of this fact are his express declarations to Mr. Cooley ('Inner Africa Laid Open,' p. 56), that he saw the "Swaha," or Rufiji, issuing from the lake (Tanganyika) with his own eyes; and that there is a total want of water during the last three days from Oha to the lake, where the road runs along the right bank of the great Malagarazi River. Another specimen of his lively imagination is the carnelian or agate currency brought from the summit of Kilima Ngao, and gravely chronicled by the European geographer. In 'Inner Africa Laid Open,' p. 72, Mr. Cooley rightly asserts that Khamis bin Osman was well acquainted with the Wanyassi, and knew but the one lake.

† In the map appended to Lient. F. Wilford's paper on 'Egypt and other Countries adjacent to the Nile of Ethiopia' ('Asiat. Researches,' vol. iii.), the Kali, or Nile, takes its rise from the Amara Lake, also called Deva Sarovara, or the Lake of the Gods, in the regions of Sharma, or Sharmasthan, between the mountains of Ajagara and Sitanta. The country round the lake is also called Somagiri, or Moon Mountains, and the water stretches from a little S. of the equator to 14° S. lat., thus combining the Tanganyika with the Nyassa, or Maravi Lake.

‡ In the 'Westminster Review' (New Series, No. XX.) occurs the following passage, which sufficiently illustrates the assertion in the text; the learned critic is discussing Mr. C. Andersson's 'Lake Ngami,' &c. &c. (London, 1856):—"African missionaries, penetrating some little distance inland from the S.E., recently brought information, which they received secondhand from Arab travellers, of a vast freshwater lake far in the interior, described as being of enormous dimensions—as nothing less than a great inland sea. Frequenters of the Geographical Society's

The earliest name given by theoretical writers to the hypothetical single lake appears to have been Zembére, Zémberé, Zambre, Zambri, or Zembre, probably a corruption or dialectic variety of Zambesi,* that river being supposed, like the Nile, the Zaire, the Manisa, and others, to be derived from it. The word Moravi or Maravi, which still deforms our maps, is the name of a large tribe dwelling about the Nyassa. In the seventeenth century Luigi Mariano,† a missioner residing at the Rios de Sena, calls the Central Sea the Lake of Hemosura; his description however applies to the Nyassa, Maravi or Kilwa Lake, and the word is probably a corruption of Rusuro or Lusuro, which in the language of Uhiao signifies a river or flowing water. In the 'Mombas Mission Map' the lake is called "See von Uniamesi," a mere misnomer, as it is separated by hundreds of miles from the Land of the Moon: the northern part is termed Ukerewe, by a confusion with the Nyanza Lake; and the southern is named N'hánjá, for Nyassa, the old "Maravi water" near Kilwa. It is not a little curious, however, that Messrs. Cooley and Macqueen‡ should both have recorded the vernacular name of the northern Lake "Tanganyika,"§ so unaccountably omitted from the

meetings in Whitehall-place have observed in consequence, on the site which used to be marked in the maps as a sandy desert, a blue spot, about the size of the Caspian, and the shape of a hideous inflated leech. We trusted that a more accurate survey would correct the extreme frightfulness of the supposed form. Mr. Andersson has spared us further excitement. The lake turns out to be a mirage—a mythus with the smallest conceivable nucleus of fact. On the very spot occupied by this great blue leech—long. E. from Greenwich 23° and lat. S. $20^{\circ} 21'$ —he found a small speck of bitter water, something more than twenty miles across, or the size of Lake Corrib in Galway. So perishes a phantom which has excited London geographers for a whole season."

Had the learned reviewer used his eyes or his judgment in Whitehall-place, he would not thus have confounded the hypothetic sea of the 'Mombas Mission Map'—a reservoir made to include the three several waters of Nyanza, Tanganyika, and Nyassa—in E. long. 24° — 29° , and S. lat. $0^{\circ} 13'$ —with the little Ngami explored by Dr. Livingstone and a party of friends in August, 1849, and placed by him in E. long. 23° , and in S. lat. $20^{\circ} 20'$ — $21'$. The nearest points of the two waters are separated by an interval, in round numbers, of 700 miles.

* Dr. Beke erroneously supposes it to be a corruption of "Usambiro," the name of a distant eastern province (chap. x.), utterly unknown to the Lakist population of the Tanganyika, though possibly familiar to those dwelling near the Nyanza.

† 'Lettere annue d'Etiopia, Malabar, Brasil, e Goa' (Roma, 1627), quoted and explained by Mr. Cooley.

‡ Mr. Macqueen (in the map appended to 'Notes on the Geography of Central Africa,' p. 116) places the northern point of the Tanganyika in about $3^{\circ} 45'$ S. lat., and the centre in 32° E. long. He also ('Geography of Central Africa,' p. 122) infers that the Cassabe River, or its united streams, "must," if the information of M. Ladislaus Magyar's observations be correct, "be a feeder of the Great Lake Tanganyika, in the Monomoise country."

§ "From a town or tribe called Zanganyika (Zangañika), on the opposite or south-western side of the lake (near which Oha is three days' voyage across), they obtain copper, ivory, and oil of a red colour" ('Geography of N'yassi,' p. 29, and 'Inner Africa Laid Open,' p. 59). There is no town near the lake, and Zanganyika, in the S. A. dialect, cannot be the name of a tribe; as it "wants the indispensable characteristic of the personal and gentle form."

'Mombas Mission Map.' The words Tanganyenka and Tanganyenko used by Dr. Livingstone, who in places appears to confound it with the Nyanza and the Nyassa,* are palpable mispronunciations.

The African name for the central lake is Tanganyika, signifying an anastomosis, or a meeting-place (sc. of waters), from *ku tanganyika*, the popular word "to join," or "meet together :" the initial t being changed to ch—*ku changanyika* for *tanganyika*—in the *lingua franca* of Zanzibar doubtless gave rise to Mr. Cooley's "*Zanganyika*." The word Tanganyika is universally used by the Wajiji and other tribes near and upon the lake. The Arabs and African strangers, when speaking loosely of it, call it indifferently the Bahari or Sea, the Ziwa or Pond, and even the Mtoni or River. The "Sea of Ujiji" would, after the fashion of Easterns, be limited to the waters in the neighbourhood of that principal dépôt.†

The Tanganyika occupies the centre of the length of the African continent, which extends from 32° N. to 33° S. latitude, and it lies on the western extremity of the eastern third of the breadth. Its general direction is parallel to the inner African line of volcanic action drawn from Gondar southwards through the regions about Kilima Ngáo (*Kilimanjaro*) to Mount Njesa, the eastern wall of the Nyassa Lake.‡ The general formation suggests, as in the case of the Dead Sea, the idea of a volcano of depression—not, like the Nyanza or Ukerewe, a vast reservoir formed by the drainage of mountains. Judging from the eye, the walls of this basin rise in an almost continuous curtain, rarely waving and inflected, to 2000 or 3000 feet above the water-level. The lay is almost due north

* When Dr. Livingstone ('Journeys and Researches in S. Africa,' chap. xxiv.) reports the "Tanganyenka" to be "connected with another named Kalagwe, or Garsgue, farther north," he alludes to the Nyanza, or Ukerewe, lying to the east of the mountain district of Karagwah, which must not, however, be confounded with the far-distant Abyssinian Gurague, as was done by João dos Santos in 1684, who writes that the "pagans and savages of Munimiji derived revenue from their gold-mines in the kingdom of Gorage." The Arabs have dreamed of a river connecting the Nyanza and the Tanganyika, but the difference of levels, as will presently appear, disproves its existence. In the conclusion of the above-quoted sentence, "and may be the Nyanja of the Maravim," the author manifestly adhered to the old error which joins the Nyassa with the Tanganyika.

† Dr. Berghaus, "the would-be reviver of Domville, who published, in 1850, the worst map of Africa produced for a century and a half" (Mr. Cooley, 'Inner Africa Laid Open,' p. 51), actually places in $7^{\circ}30' S.$ lat., and $24^{\circ} E.$ long., with a length of 180 and a breadth of forty miles, a water which he calls Awilunda, the Achelunda of Duarto Lopez, who resided in Congo about 1580.

‡ Mr. Cooley ('Geography of N'yassi,' p. 48) concludes that the lake (in which he unites the Tanganyika with the Nyassa) extends chiefly from S.E. to N.W., a "direction parallel to the line of volcanic action drawn through the Isle de Bourbon, the north of Madagascar, and the Comoro Islands, and to one of the two lines predominating on the coasts of Southern Africa, where there are no alluvial flats, and which may be considered as the results of mineralogical laws, and as marking the principal fractures of the rocky system."

and south, and the form a long oval, widening in the central portions and contracting systematically at both extremities. The length of the bed was thus calculated. From Ujiji (in s. lat. $4^{\circ} 55'$) to Uvira (in s. lat. $3^{\circ} 25'$), where the narrowing of the breadth evidences approach to the northern head, was found by exploration a direct distance of $1^{\circ} 30'$ — 90 miles, which, allowing for the interval between Uvira and the river Rusizi, that forms the northernmost limit, may be increased to 100 rectilinear geographical miles. According to the Arab voyagers, who have frequently rounded the lake, Ujiji lies 8 stages from the northern, and 12 from the southern end; the extent from Ujiji to the Marungu River, therefore, is roughly computed at 150 miles. The total of length, from Uvira in s. lat. $3^{\circ} 25'$ to Marungu in s. lat. $7^{\circ} 20'$, would then be somewhat less than 250 rectilinear geographical miles. About Ujiji the water appears to vary in breadth from 30 to 35 miles, but the serpentine form of the banks, with a succession of serrations and indentations, of re-entering and salient angles—some jutting far and irregularly into the bed—render the estimate of average difficult. The Arabs agree in correctly stating, that opposite Ujiji the shortest breadth of the lake is about equal to the channel which divides Zanzibar from the mainland, or between 23 and 24 miles. At Uvira the breadth narrows to 8 miles. Assuming, therefore, the total length at 250, and the mean breadth at 20, geographical miles, the circumference of the Tanganyika would represent, in round numbers, a total of 550 miles; the superficial area, which seems to vary little, covers about 5000 square miles; and the drainage from the beginning of the great Central African depression in Unyamwezi, in e. long. $33^{\circ} 58'$, numbers from the eastward about 240 miles.

By B. P. thermometer the altitude of the lake is 1850 feet above the sea-level, and nearly 2000 feet below the plateau of Unyamwezi and the Nyanza, or northern lake. This difference of level, even did not high hill-ranges intervene, would preclude the possibility of that connection between the waters which the Arabs, by a conjecture natural to inexpert geographers, have maintained to the confusion of the learned. The topographical situation of the Tanganyika is the centre of a deep depression, a hollow trough in the southern spurs of Urundi, which, with its mountain-neighbour Karagwah, situated upon the equator, represents the Central African portion of the Lunar Mountains. It may be observed that the parallel of the northern extremity of the Tanganyika nearly corresponds with the southern creek of the Nyanza, and that they are separated by an arc of the meridian of about 343 miles.

The water of the Tanganyika appears deliciously sweet and pure after the salt and bitter, the putrid and slimy produce of the

wells, pits, and pools on the line of march. The people, however, who drink it willingly when afloat, prefer, when on shore, the little springs which bubble from its banks. They complain that it does not satisfy thirst, and they contrast it unfavourably with the waters of its rival the Nyanza : it appears, moreover, to corrode metal and leather with exceptional power. The colour of the pure and transparent mass has apparently two normal varieties : a dull sea-green—never, however, verdigris-coloured, as in the shoals of the Zanzibar seas, where the reflected blue of the atmosphere blends with the yellow of the sandy bottom ;—the other, a clear, soft azure, not deep and dark, like the ultramarine of the Mediterranean, but resembling the light and milky tints of tropical seas. Under a strong wind the waves soon rise in yeasty lines, foaming up from a turbid greenish surface, and the aspect becomes menacing in the extreme.

It was found impracticable to take soundings of the Tanganyika : the Arabs, however, agreed in asserting that with lines of several fathoms they found bottom only near the shores. The shingly shore shelves rapidly, without steps or overfalls, into blue water. Judging from the eye, the bottom is sandy and profusely strewn with worn pebbles. Reefs and washes were observed near the shores ; it was impossible to form an idea of their position or extent, as the crews confine themselves to a few well-known lines, from which they cannot be persuaded to diverge. Moreover, amongst other superstitions, they have a marked objection to be asked questions when upon the water. No shoals or shallows were seen at a distance from the coasts, and though islets are not frequent upon the margin, only one was observed or heard of near the centre.

The affluents of this lake are neither sufficiently numerous nor considerable to alter by sedimentary deposit the depth or the shape of the bed. The borders are generally low : a thick fringe of rush and reed, obviating erosion by the element, conceals the watery margin. Where the currents beat, they cut out a short and narrow strip of quartzose sand, profusely strewn with large shingle, gravel, comminuted shells, and marine exuviae, with a fringe of drift formed by the joint action of wind and wave. Beyond this is a shelving plain—the principal locality for cultivation and settlements. In some parts it is a dry conglomerate ; in others, a rich red loam, apparently stained with oxide of iron ; and in others sandy, but everywhere coated with the thickest vegetation extending to the background of mountains. The coast is here and there bluff, with miniature cliffs and headlands, whose formation is of sandstone strata tilted up and distorted, or small blocks embedded in indurated reddish earth. From the water appeared piles of a dark stone resembling angular basalt, and amongst the

rock-crevices the people find the float-clay, or mountain meal, with which they decorate their persons and the sterns of their canoes. The uncultivated hill summits produce various cactaceæ; the sides are clothed with giant trees, the mvule,* the tamarind, and the bauhinia. On the declines, more precipitous than Swiss terraces, manioc and cereals grow luxuriantly, whilst the lowest levels are dark with groves of plantains and Guinea-palms.

A careful investigation and comparison of statements leads to the belief that the Tanganyika receives and absorbs the whole river-system—a network of streams, nullahs, and torrents—of that portion of the Central African depression whose watershed converges towards the great reservoir.† Geographers will doubt that such a mass, situated at so considerable an altitude, can maintain its level without an effluent. Moreover, the freshness of the water would, under normal circumstances, argue the escape of saline matter washed down by the influents from the area of drainage. But may not the Tanganyika, situated, like the Dead Sea, as a reservoir for supplying with humidity the winds which have parted with their moisture in the barren and arid regions of the south, maintain its level by the exact balance of supply and evaporation? And may not the saline particles deposited in its waters be wanting in some constituent which renders them evident to the taste?‡ One point concerning the versant has been proved by these pages, namely, that the Tanganyika cannot be drained eastward by rents in a subtending mountain ridge, as was supposed by Dr. Livingstone from an indiscriminately applied analogy with the ancient head-basin of the Zambesi.§

As in Zanzibar, there is little variety of temperature upon the Tanganyika. The violent easterly gales, which, pouring down

* A large forest-tree found in the island and on the coast of Zanzibar, where, however, it has become rare, in consequence of the wastefulness of the people, who destroy the finest trunk to make a diminutive plank or canoe.

† If the statement of the Arabs concerning the influence of the Marungu, or Southern River, into the Tanganyika be correct, there must be a seam of high ground across the Central African depression, and a change of watershed between that lake and the Nyassa of Kilwa.

‡ In the African continent, moreover, the saline lakes are of small dimensions; and some, the lately-discovered Shirwa and the Ngami for instance, are fresh and potable during the rainy seasons.

§ Dr. Livingstone (chap. xxiv.-xxvi. et passim) informs his readers, from report of the Arabs, that the Tanganyika is a large shallow body of water; in fact, the residuum of a mass anciently much more extensive. This, however, is not and cannot be the case. In theorizing upon the eastern versant and drainage of the Tanganyika, Dr. Livingstone seems to have been misled by having observed that the vast inland sea of geological ages, of which Lake Ngami and its neighbour Kumadan are now the principal remains, had been desiccated by cracks and fissures, caused in the subtending sides by earthquakes and sudden upheavals, which thus opened for the waters an exit into the Indian Ocean. This may have happened to the Nyassa, or Southern Lake; it must not, however, be generalized and extended to the Nyanza and the Tanganyika.

from the cold heights of Usagara, acquire impetus sufficient to carry the current over Ugogo, Unyamwezi, and Uvinza, are here less sharply defined. The periodical winds over the lake—regular, but not permanent—are the south-east and the south-west, which also bring up the foulest weather. The land and sea breezes are felt almost as distinctly as upon the shores of the Indian Ocean. The breath of the morning, called by the Arabs el barad, or the zephyr, sets in from the north. During the day are light variable breezes, which often subside, when the weather is not stormy, into calms. In the evenings a light afflatus comes up from the lake. Throughout the dry season the lake becomes a wind-trap, and a heavy ground-sea rolls towards the shore. In the rains there is less sea, but accidents occur from sudden and violent storms, which are preluded, as about Zanzibar, by sudden gusts of cold and rainy wind.* The mountainous breakers of Arab and native informants were not seen; indeed, with a depth of three feet from ridge to dell, a wave would swamp the largest laden canoe. Wind-currents appear common. In a few hours a stream will be traversed setting strongly to the east, and crossed by a southerly or a south-westerly current. High gales, in certain localities where the waves set upon a flat, flush shore, drive the waves from 15 to 20 feet beyond the normal mark. This circumstance may partly explain the Arab belief in a regular ebb and flow, which they maintain has been observed in the Tanganyika and the Nyassa Lakes, and which Mr. Andersson believes to exist in the Ngami. A mass of water so large must be, to a certain extent, subject to tidal influences; but the narrowness of the bed from west to east would render this effect almost unobservable.†

The navigation of the Tanganyika is as yet undeveloped. It has neither quay nor jetty, except strips of sand; nor harbour, save shallow bays or dwarf creeks winding through hedges of stiff rush. In former times the Arabs built sailing-vessels, bought gangs of slaves, and trained them to row instead of paddling. In 1858 there remained but one dow, or small quarter-decked sailing-craft, capable of carrying about 50 men; it belonged to an Arab merchant, Hamid bin Sulayyam, who, professing willingness to let it for a voyage, nullified his concession by removing the crew. The native boats ‡

* These general observations rest upon the authority of the Arabs.

† Mr. Gaiton, the S. African traveller, refers for the explanation of this phenomenon to a paper 'On the Seiches of Lakes,' by Colonel J. R. Jackson, F.R.G.S., published in the 'Journal of the R. G. S.', vol. iii. of 1833, in which the learned author refers the ebb and flow of the waters of Lake Leman, or of Geneva (and of the lakes of Zurich, Annecy, and Constance), to "an unequal pressure of the atmosphere on different parts of the lake at the same time; that is, to the simultaneous effect of columns of air of different weight or different elasticity, arising from temporary variations of temperature, or from mechanical causes."

‡ The craft are called *mátabimbi*: in Kisawahili the smaller would be termed *máshúa* (from the Indian *machua*), and the larger *chyombo*, which Mr. Cooley

are long, narrow canoes, rudely hollowed with the axe—the application of fire being unknown—in fact, mere logs of mvule, or some other large tree. The most considerable are composed of three parts—clumsy, misshapen planks, forming, when placed side by side, a keel and two gunwales, the latter fastened to the centre-piece by cords of palm-fibre passing through lines of holes. The want of caulking causes excessive leakage : the cry Senga !—bale out !—rarely ceases, and the irregular hollowing of the tree-trunk makes them lie lopsided in the water. These vessels have neither masts nor sails ; an iron ring, fixed in the stern, is intended for a rudder, which, however, seldom appears except in the canoes of the Arabs, and a flag-staff or a fishing-rod projects from the bow. Layers of palm-ribs are strewed over the interior to raise the cargo—which is often of salt—above the bilge-water. The crew sit upon narrow benches, extending across the canoe and fastened with cords to holes in the two side-pieces ; upon each bench, despite the narrowness of the craft, two place themselves side by side. The stout, stiff mats used for hutting and bedding are spread for comfort upon the seats ; and for convenience of paddling, the sailors, when at work, incline their bodies over the sides. In the centre there is a square place about 6 feet long, left clear of benches ; here also cargo is stored, passengers, cattle, and slaves are carried, the paddles, gourds, and other furniture of the crew are thrown, and the baling is carried on by means of an old buyu.* It is often ankle-deep in water, and affords no convenience for leaning or lying down ; the most comfortable place, therefore, is near the stern or the bow of the boat. The spears are planted upright at one or two corners of the hold, so as to be ready at a moment's notice ; each man usually has his dagger stuck in his belt, and on long trips all are provided with bows and arrows. These Africans cannot row. The paddle on the Tanganyika is a stout staff, about 6 feet long, and cut out at the top to admit a trefoil-shaped block the size of a man's hand. The block is adorned with black paint in triangular patches ; it is tied to the staff by a bit of whipcord, and it seldom lasts a day without breaking. The paddler, placing one hand on the top and the other about the middle of the staff, scoops up, as it were, the water in front of him, steadyng his paddle by drawing it along the side of the canoe. It is a laborious occupation, and an excessive waste of power.

The lake people derive their modern practice of navigation, doubtless, from days of old ; the earliest accounts of the Portuguese

(* Inner Africa Laid Open,' p. 12) writes "jumbo." The Arab dhow, used on the coast for craft generically, means, on the Tanganyika, a "foyst," or half-decked vessel.

* *The Cucurbita lagenaria.*

mention the traffic of this inland sea. They have three principal beats from Ujiji: the northern abuts at the ivory and slave marts of Uvira; the western conducts to the opposite shores of the lake and the island-depôts on the south-west; and the southern leads to the land of Marungu. Their canoes creep along the shores like the hollowed elder-trees of thirty bygone centuries, and, waiting till the weather augurs fairly, they make a desperate push for the other side. Nothing but their extreme timidity, except when emboldened by the prospect of a speedy return home, preserves their cranky craft from constant accidents. The Arabs, warned by the past, prefer the certain loss incurred by deputing for trading purposes agents and slaves to personal risk. A storm upon the lake, especially on one of the portentous evenings of the tropics, is indeed deeply impressive. The wind is hushed and the air feels sultry and stifling, while low mutterings from the sable cloud-banks lying upon the horizon, cut by light masses of mist in a long unbroken line, or from the black arch rising above the Acroceraunian hills, at times disturb the deathlike stillness. Presently, as the shades deepen, a cold gust of wind—the invariable presage of a storm—pours through the “vast of night;” lightning flashes at first by intervals, then incessantly, with its accompaniment of reverberating thunder; now a loud rumbling roll like the booming of heavy batteries, then deepening into a crash which is followed after an interval by a rattling discharge like the sharp pattering of musketry. The waves begin to rise; the rain—descending at first in warning-drops, presently in torrents—blinds the crew; and if the wind increases there is little chance of the frail canoe living through the short chopping sea. In addition to the dangers of the deep, the maritime tribes are, or are supposed to be, ever planning ambuscades against the boats touching at their lands, and the sight of a few woolly heads in the bush causes the crew to rise precipitately from food or sleep, to rush headlong to their canoes without caring what may be left behind, and to put out to sea beyond the reach of a flight of arrows.

A voyage upon the Tanganyika begins with all the difficulties and delays of African locomotion. When the boat is hired the crew must be collected, and paid, rationed, and kept together. This is no easy task, as each man is thinking solely of his own affairs, disdaining the slightest regard for the wishes, the comfort, or the advantage of his employer. The cargo must then be placed on board, and the canoe moved from its original place to a point of known departure, otherwise no man can be persuaded to embark. The expedition sets out in a kind of procession; the captain, dressed in his best dress, heads the sailors, who are followed by their loud-voiced wives performing upon the rudest musical instruments. Of these the most noisy is a kind of shawm, a straight

tube of wood bound with palm-fibre, and opening like a clarionet: a distressing bray is kept up through a hole pierced in the side. The most monotonous is a pair of foolscap-shaped cones of thin iron, joined at the apices, and connected at the bases by a solid cross-bar. This rude tomtom is performed upon with painful perseverance by a stick muffled with cloth or skin. After embarkation the canoe must be paddled out for a mile, to ascertain the proper quantum of cargo and crew, an exertion followed by fresh delays for victualling, taking leave, settling disputes, hard drinking, and driving deserters. The first stage is short enough to admit of the scene being encored. Finally, when the weather is perfectly calm, and no pretext nor desire for further detention remains, the crew scramble into the canoes, and with the usual hubbub and strife—order which no man obeys, and advice which no man takes—they pole off and paddle along the shore.

The Wajiji, and, indeed, all these races, never work silently or regularly. A long monotonous howl, broken occasionally by a scream of delight from the boys, or by the bray and clang of the instruments, lasts throughout the trip, except when extreme terror induces a general silence. They row in "spirts," applying deedly to their paddling, till the perspiration pours down their sooty persons, and splashing the water in streams over the canoe: after a few minutes, fatigued and breathless, they either stop to quarrel, or they progress languidly till recruited for another effort. When two boats are together they race continually, till a bump and the consequent difficulty of using the paddles afford an opportunity of a little chatter and abuse. At times they halt to eat, drink, or smoke: the bhang-pipe is produced after every hour, and the paddles are taken in whilst they indulge in the usual screaming whooping cough. They will not allow questions to be asked, or scraps of provision to be thrown overboard: moreover, it is a mortal sin to chip or to break off the smallest bit of even a worn-out boat drawn up useless on the sands. They will lose half an hour, when time is most precious, to secure a dead fish as, entangled in its net, it floats past the canoe. They never pass a village or a settlement without a dispute; some wishing to land, and the others objecting because the some wish it. The captain, seated either in the fore or in the stern, has no authority; and if the canoe be allowed to touch the shore, half the crew will spring out, without an idea of consulting anything but their own convenience. Obeying only impulse, and wholly deficient in order or arrangement, they make the voyage as uncomfortable as possible: they have no regular stages, and no fixed halting times; they will waste a fine cool morning, and pull through the heat of the day, or doze throughout the day, and at the cry of Pakirá Bábá!—pack up, hearties!—they will rush into their canoes after midnight. Out-

ward bound, they seem to seek opportunities for delay ; homeward, they hurry with precipitous haste. Arrived at their destination, there is a general concert, vocal and instrumental, whilst the captains perform a solemn and bear-like dance upon the mat-covered benches, the apology for a quarter-deck ; and when touching at places where they have friends, the crews rattle their paddles against the canoe-sides in token of greeting ; an imitation, probably, of the ceremonious address which is performed by knocking the elbows against the ribs. Finally, the voyage concluded, they enter their homes by daylight with much pomp and ceremony, noise and jollity, and are not sober for the next fortnight.

The Lakists generally are an almost amphibious race, excellent divers, strong swimmers and fishermen, and vigorous ichthyophagists all. At times, when excited by the morning coolness and by the prospect of a good haul, they indulge in a manner of merriment which resembles the gambols of sportive water-fowls : standing upright and balancing themselves in their hollow logs, which appear but little longer than themselves, they strike the water furiously with their paddles, skimming over the surface, dashing to and fro, splashing one another, urging forward, backing, and wheeling their craft, now capsizing, then regaining their position with wonderful dexterity. They make coarse hooks, and have many varieties of nets and creels. Conspicuous on the waters and in the villages is the Dewa, or "otter" of Oman, a triangle of stout reeds, which shows the position of the net. A stronger variety, and used for the larger ground-fish, is a cage of open basket-work, provided, like the former, with a bait and two entrances. The fish once entangled cannot escape, and a log of wood, used as a "trimmer," attached to a float-rope of rushy plants, directs the fisherman. The heaviest animals are caught by a rope-net—the likh of Oman—weighted and thrown out between two boats. They have circular frames of lath, meshed in with a knot somewhat different from that generally used in Europe ; the smaller kind is thrown from the boat by a single man, who follows it into the water,—the larger, which reaches 6 feet in diameter, is lowered from the bow by cords, and collects the fish attracted by the glaring torch-fire. The Wajiji also make big and little dragnets, some let down in a circle by one or more canoes, the others managed by two fishermen, who, swimming at each end, draw it in when ready. They have diminutive purse-nets to catch small fry, hoops thrust into a long stick-handle through the reed walls that line the shore ; and by this simple contrivance the fish are caught in considerable quantities. The wigo or crates alluded to as peculiar in the 'Periplus,'* and still common upon the Zanzibar coast, are

found at the Tanganyika. The common creel resembles the khún of Western India, and is well known even to the Bushmen of the South : it is a cone of open bamboo strips or supple twigs, placed lengthways, and bound in and out by strings of grass or tree fibre. It is closed at the top, and at the bottom there is a narrow aperture, with a diagonally-disposed entrance like that of a wire rat-trap, which prevents the fish escaping. It is placed upon its side with a bait, embanked with mud, reeds, or sand, and well answers the purpose for which it is intended. In Uzaramo and near the coast the people narcotise fish with the juice of certain plants : * about the Tanganyika the art appears unknown.

There are many varieties of fish in the waters of this lake. The Mvoro is a long and bony variety, in shape like a large mackarel : the Sangâle resembles it, but the head and body are thicker. The Mgege, which suggests the Pomfret of Western India, is well flavoured, but full of bones. The Mguhe is said to attain the length of 5 or 6 feet : it is not unlike the kheri of the Indian rivers, and to a European palate it is the best fish that swims in these waters. The largest is the Singâ, a scaleless variety, with black back, silvery belly, and long fleshy cirri : it steals along the bottom, and is unfit for leaping or for rapid progress. This fish is much prized by the people on account of its rich and luscious fat. Like the Pallu of Sindh, it soon palls upon the European palate. Want of flavour is the general complaint made by the Arabs and Coast-clans against the produce of the Tanganyika : they attempt to remedy the wateriness of the fish by exposing it spitted to a slow fire, and by subsequently stowing it for the night in well-closed earthen pots. Besides the five varieties above alluded to, there are dwarf eels of good flavour, resembling the Indian Bam,^t Daga'a, small fish called by the Arabs Kashu'a, minnows of many varieties, which, simply sun-dried, or muriated if salt can be afforded, find their way far east ; a dwarf shrimp,^t about one-quarter the size of the common English species ; and a large bivalve called Sinani, and identified as belonging to the genus Iridina. The meat is fat and yellow, like that of a well-fed oyster, but it is so insipid that none but a Mjiji can eat it. The shells collected upon the shores of the Tanganyika and on the land journey have been described in the Proceedings of the Zoological Society of London, June 28, 1859, by Mr. S. P. Woodward, F.G.S., who courteously named two species after the European members of the

* In Southern Africa, and perhaps in the Eastern regions generally, the juice of the *asclepias* is used.

^t They are also found in the Cape rivers.

^t A small artemia, or brine shrimp, was discovered by the late Dr. Vogel in the Trona Lakes of Northern Africa.

Expedition. To his memoir the reader is referred : a list of the names is given below.*

The scenery and the navigation of the Tanganyika may be illustrated by detailing the normal cruizes to the islands lying southwest of Ujiji and to Uvira, near the north-western extremity. The former transit consists properly of two stages : the crews, however, usually occupy three days, which are thus divided. When the departure has been definitively effected, the crew, turning their canoe southwards from Ujiji, paddle past the embayed embouchures of the Ruche and the Malagarazi Rivers, sometimes halting to purchase ivory and hippopotamus' tusks. They rest at the Khambi, or station "Mgeti"—a little bay bordered by grass and mud, close, but not unpicturesque, and at reedy nooks near the mouths of the little Ruguvu (Liguvu?), and Hebwe streams. After 15 h. 40 m. of paddling, not including three for breathing, smoking, and quarrelling, they put into Insigazi, a deep bight abounding with hippopotamus and crocodile, near a point or bluff bearing s. 23° e., and still in sight of Ujiji. A little beyond it lies the headland of Kabogo or Kavogo, a local term, equivalent to the Indian "ghaut"—a place for embarkation and debarkation. This landmark appears to be the "Insel Kavogo" of the 'Mombas Mission Map,' there placed almost in the centre of the lake, about 2° or 5 days' rowing from Ujiji, and from 15 to 20 days from the western coast of the Tanganyika. The legends attached to this mistaken spot concerning the "Herr des See's, ein böser geist," the discolouration of the water, and the population of the hill by evil spirits, are rather Germanic than African. It is true that a particoloured hen (not a "black sheep and a white hen") is sometimes offered up as a kurban by Arabs, with the usual idea underlying sacrifice : the crews, however, cannot afford a sheep, and travellers, whose peregrinations have extended to the Tanganyika, consider dinner a duty superior to atonement. The people about Kavogo are dangerous ; they have apparently no occupation but that of rude "wreckers," who attempt to plunder travellers in difficulties.

Awaiting clear skies and smooth waters, the crews paddle lustily from Insigazi across the lake to the island of Kirira, near the

* The shells found upon the Tanganyika, according to Mr. Woodward, are :—

1. Iridina (Pleiodon) Spekei, n. sp.
2. Unio Bartoni, n. sp.
3. Lithoglyphus Zouatus, n. sp. ; 4. Melania (Melanella) Nassa, n. sp.

The land shells are :—

1. Bulimus ovoideus, Brug. ; also found at Nosse Be;
2. Achatina glutinosa (?) ;
3. Achatina callianzi ("Bulimus") ;
4. Lanistes Siuistrorsa ;
- 5 and 6. Unio (two species, odd valves).

western shore, in 11 hours, or, halts included, in 14 hours. It is not easy to estimate the average rate of progress. During the "spirts," when every "son of water" bends his back manfully to his task, a fully-manned craft may attain a maximum of 7 to 8 miles per hour: this exertion, however, never exceeds a quarter of an hour, and is always followed by delay. The usual pace, when all are fresh and cool, is about 4 to 5 miles, which declines through 4 and 3 to 2·50, when the men are fatigued, or when the sun is high. The medium, therefore, may be assumed at 4 miles for short, and a little more than 2 miles an hour for long trips, halts deducted. Thus the distance from Insigazi to Kirira would be a diagonal of between 23 and 25 geographical miles.

Kirira, the largest of the three south-western islets, bears 215° (corrected 228°) from Ujiji: it is a long, narrow, irregular mass, of primary formation, projecting, like a headland or promontory, from the main land, in length from east to west 5, and in breadth from 2 to 3 miles. The steeps are abrupt and thickly wooded; in places there are dwarf terraces, and the hilly centre commands an extensive view of the lake, whose lay is here between 10° (corrected 357°), and 185° (corrected 198°)—the direction of Ut'hembe on the western shore: in fact, allowing for compass variations, which at the Tanganyika may be assumed at 13° west,† nearly due north and south. The stranger approaching Kirira is challenged by a watch-boat. After satisfying the people as regards his business, he is allowed to enter the long deep bay in which lies the Khambi, or station. From two neighbouring villages, surrounded by cultivation, manioc, grain, pulse, and sometimes poultry, with which the people reluctantly part, may be procured for mzizima, or blue glass beads. The best medium for barter is salt, then meat or tobacco, and thirdly, the large blue glass beads; the blue and white porcelains tempt no one. Fish is not caught at Kirira. The people of this and the neighbouring islands are, like the races of Uguhha on the mainland, poor and numerous: the usual male dress is a diminutive apron of monkey's skin.‡

A voyage of 1 h. 30 m. conducts the merchant from Kirira to its neighbour Kabizia. This is a rock about half a mile in circumference, rising from north-west to south-east, well wooded, and supplying poultry, holeus, manioc, sweet potatoes, and beans.

* M'ána mdíj—a sailor.

† On the coast 10° w. The compass variation was laid down by Mr. Findlay as given to him by Mr. Evans, R.N.

‡ The "Khima" and "Mbega" supply silky and shiny skins, of a uniform dark colour; reddish-yellow and other coloured coats were also observed on the Tanganyika, and sometimes amongst the porters of the inland caravans. The people of Kirira trap monkeys in large surrounds of nets, stacked down in and concealed by vegetation. When a battue is necessary the men assembling in a body drive the animals with loud shouts into the snare.

Extensive fishing-grounds lie between the two islets, and the produce is exported even to the mainland. The principal village is a settlement of about twenty huts, lying upon the declivity of a hill.

Kasenge,* the south-westernmost of the three islets, in s. lat. $5^{\circ} 44'$, is reached after 1 h. 30 m. paddling from Kabizia. It is a narrow block of high ground, grass-clad, but, unlike the rest of this group, destitute of trees: the length is about 2·25 (?) miles, and it appears almost embedded in the coast, from which it is separated by a deep narrow belt. The opposite mainland is a strip of green and grassy shore, backed by a line of higher level, which obstructs the view. On the northern extremity of the islet are two villages, which supply sweet-potatoes and beans. Holcus, however, is not grown; poultry is expensive; fish, being brought from Kirira, is dear, and provisions generally are with difficulty procurable. The situation is confined and depressed, the air is heavy; fevers are more common at Kasenge than at the neighbouring islands, and the Arabs complain of torpor and deficient energy. This group, however, has frequently been visited by strangers since the increased price of slaves and ivory has urged them westwards from Ujiji to Uruwwa. Preferring Kasenge as a starting-point to the circuitous route via Kawele, the merchants have built two large tembe. They manage to live comfortably by sending their dows and canoes for necessaries and comforts—grain, meat, and ghee—to the eastern coast and to the western mainland of Uguhha, where, it is said, provisions are extraordinarily cheap, the masuta or half-load of grain costing about 2 fundo or half a shukkah. When the masters are absent, the boats are careened under sheds, and are committed to the charge of drunken fundi (factors) and slaves, who do a little business with them on their own account.† Kasenge boasts of a sultan, who, in return for his present of a goat and two small sacks of holcus, expects 4 cloths, a pair of kitindi or brass-wire bracelets, and 2 fundo or 20 strings of blue glass beads. The little island of Kasenge collects the surplus supply of slaves from Uguhha, Uruwwa, and Marungu. The prices are lower than those of Ujiji when caravans come in; but usually Ujiji, having more regular and copious supplies, is the cheaper market. In 1858 the price of children at Kasenge was from 2 to 3 shukkahs merkani a head.

This group was explored by Captain Speke in March 1858.

The northern line differs from the southern in having an abun-

* As has been remarked, Mr. Cooley ('Geography of N'yasri,' p. 29) makes the lake —by which the Tanganyika is manifestly intended—three days' voyage across. The text shows that three days are occupied on the trip, but not in actually crossing.

† At this place Hamid bin Sulayyam refused 500 dollars as the hire of his small, stern-decked sailing craft, to circumnavigate the lake, an operation which might easily have been effected in two months.

dance of provisions ; the people however are, if possible, wilder and more dangerous, and there are at least three chiefs who demand and can enforce black-mail. Without including short preparatory trips, and the many shifting of place at the island of Ubwari, the passage from Ujiji to Uvira is divided into eight stations. Of these, three are on the eastern mainland ; part of one day is employed in crossing the lake, and the remaining four in coasting up the western shore northwards.*

After moving from the roadstead of Kawele to an open sand about a mile westwards, where cargo is brought on board, the crews paddle in half an hour to a shingly and grassy creek, defended by a sand-spit, and backed by luxuriant trees. Opposite, and but a few hundred yards distant, lies the desert islet "Bángwe," a quoin-shaped mass of sandstone and red earth, bluff to the north and gradually shelving towards the water at the southern extremity : the prolific moisture around has covered the upper ledge with a tall and thick vegetation. Landward the country rises above the creek ; and upon its waves, where cultivation contrasts with wild growth, appear a few scattered hamlets. The boats generally waste some days at "Bángwe Bay," loading and reloading, trimming cargo, completing rations, collecting crews, and taking leave of friends and palm-wine.

The first station, Kigari, a district of Wajiji, is reached after about 4 hours, half of which time is expended in halting by the crews, who, unsettled by proximity to home, will not apply themselves to labour. Turning the sand-spit that separates "Bángwe Bay" from the main, the canoe faces the north, where there is generally a little sea, which justifies putting back into port. The eastern shore of the lake is here a bluff of ruddy earth, pudding'd with separate blocks of sandstone. Beyond this point the shore becomes level, with strips of shingle or golden-coloured quartzose sand ; and in the shelving plain appear the little villages of the fishermen. They are usually built at the mouths of the combes and gullies, whose deep gorges, winding through the background of hill-curtain, become, after rains, mountain-torrents. The wretched settlements, placed between the tree-clad declivities and the shingle or sand-strip where the waves break, consist of half a dozen beehive huts, flimsy and leaky, emerging from a thick and fetid grass. These sites are far from comfortable : the ground is a puddle of black mud and water trickling in streamlets through the villages ; and the only furniture of the huts is a hearth of three clods or stones, with a few mats and fishing implements. The settlements

* The E. African Expedition left Kawele on the 10th April, 1858, in the last burst of the rainy monsoon, they were delayed at the north of the lake from the 26th of April to the 7th of May, and they returned to Kawele on the 13th of May, as the masika ceased.

are known from a distance by their backgrounds of palm and plantain, and by large spreading trees, from whose branches are suspended the hoops and the drag-nets not in actual use, and under which the people sit propped against their monoxyles, which are drawn up out of danger of the surf. There is no trade, and few provisions, at Kigari: crews halt there only for the purpose of rest.

The second day is employed in paddling between Kigari and Nyasanga, another dirty little fishing village: the time employed is about 6 hours, halts included, and the distance may be 8 direct miles. The settlement supplies fish-fry, but neither grain nor vegetables can be procured. Nyasanga is the northernmost frontier station of Ujiji: here the crews take leave of their fellow-clansmen, and prepare with serious faces for the perils of expatriation.

A cruise of 4 hours conducts the voyager to Kagunga, a mixed settlement of Wajiji and Warundi, near which two small rivers, the Magombi and the Njassi, are passed. Leaving this wretched mass of hovels, the boats make, in 4 hours, Wafanya, the southern limit of Urundi. Here are numerous hamlets, separated by dense thicket and thick growths of manioc, holcus, and sweet-potato. The landing-place is formed by a narrow strip of sand, upon which the canoes are drawn up, backed by a dwarf cliff, with a spreading tree, under whose shadow the crews raise their mat-boothies. They rarely go beyond a stone's-throw from the water, flight being here the thought uppermost in their minds. On the northern side of the point which limits the bay of Wafanya there is another small settlement, called Nalwawa or Kitunda, where the Warundi will supply provisions, and even milk. The southern side also affords shelter in Makimoni, a shallow, grass-grown bay.

The people of this country are a noisy and insolent race, addicted, like all their Lakist brethren, to drunkenness, and, when drunk, quarrelsome and violent. At Wafanya, however, they are kept in order by Kanoni, their mutware or minor chief, subject to "Mwezi," the Mwami or sultan of Urundi. The old man appears, when canoes reach his settlement, in some state, preceded by an ancient carrying his standard, a long wisp of white fibre attached to a spear, like the Turkish "horse-tail," and followed by a guard of 40 or 50 stalwart young warriors, armed with stout lance-like spears for stabbing and throwing, straight double-edged daggers, stiff bows, and heavy, grinded arrows. Kanoni begins by receiving his black-mail—4 cloths, 2 kitindi, and 3 fundo of coral beads: the return is the inevitable goat. The climate of Wafanya is alternately a damp cold and a "muggy" heat; the crews, however, if numerous and well armed, will delay here for days together to feed when northward-bound, and to lay in provisions when returning to their homes. Sheep and fine fat goats

vary in value from 1 to 2 cloths; a fowl, or 5 to 6 eggs, costs a khete of beads; sweet-potatoes are somewhat dearer than at Ujiji; there is no rice, but holcus and manioc are cheap and abundant, about 5 lbs. of the latter being sold for a single khete. Even milk is at times procurable. A sharp business is carried on in chickichi or palm oil, of which a large earthen pot is bought for a cloth; the best paddles used by the crews are made at Wafanya; and the mbugu, or bark-cloth, is bought for 4 to 10 khetes, about one-third of the market-price at Ujiji. Salt, being imported from Uvinza, is dear and scarce: it forms the first demand for barter, and beads the second. Large fish is brought in, but the small fry is the only article of the kind which is sold fresh. This country owes its plenty, according to the guides, to almost perennial showers.*

The inhospitality of the Warundi and their northern neighbours, who would plunder a canoe, or insist upon a blackmail equivalent to plunder, allows neither traffic nor transit to the north of Wafanya. Here, therefore, the crews prepare to cross the Tanganyika, which is divided into two stages by the island of Ubwari.

Ubwari appears from a distance of two days bearing north-west; it is then somewhat hazy, owing to the extreme humidity of the atmosphere. From Wafanya it shows a clear profile about 18 to 20 miles westward, and the breadth of the western channel between it and the mainland averages from 6 to 7 miles. Its north point lies in s. lat. $4^{\circ} 7'$, and the lay is n. 17° e. (corrected). From the northern point of Ubwari the eastern prolongation of the lake bears n. 3° w., and the western n. 10° w. It is the only island near the centre of the Tanganyika—a long, narrow rock, 20 to 25 geo. miles long by 4 or 5 of extreme breadth, with a high longitudinal spine falling towards the water, where it ends in abrupt cliffs, here and there broken by broad and by narrow gorges. In richness and profuseness of vegetation it equals, and perhaps excels, the shores of the Tanganyika, and in parts it appears carefully cultivated. Ubwari is probably the place alluded to by the Portuguese historian De Barros in this important passage concerning the great lake in the centre of Africa: "It is a sea of such magnitude as to be capable of being navigated by many sail; and among the islands in it there is one capable of sending forth an army of 30,000 men." Mariners dare not disembark on Ubwari, except at the principal places; and upon the wooded hill-sides wild men are, or are supposed to be, ever lurking in wait for human prey.

The landing ghaut at Ubwari from the east is Mzimu, a strip of land dividing the waters from a grassy slope, through which a

* General details concerning Urundi will be found in a future page of this Chapter, where the Periplos of the lake is detailed.

swampy line winds from the hills above. Here canoes are drawn up, and the islanders flock from their hamlets to change their ivory and slaves, goats and provisions, for salt and beads, wire and cloth. The Wabwari are a peculiar, and by no means a comely race. The men dress in the usual mbugu, tigered with black stripes, and tailed like leopard-skins; a wisp of fine grass acts fillet, and their waists, wrists, and ankles, their knobsticks, spears, and daggers are bound with rattan-bark. The women train their frizzly locks into two side-bits resembling bears' ears; they tie down the bosom with a cord, apparently for the horrible purpose of elongating what nature has already lengthened enough and more; and they clothe themselves with the barbarous goat-skin or the scantiest kilts of bark-cloth. The wives of chiefs wear a load of brass and bead ornaments; and, like the women of Wafanya, they walk about with patriarchal staves, 5 feet long, and knobbed at the top. At Ubwari, Sultan Kisesa, before professing himself ready to open trade, receives as his blackmail 2 cloths and 1 kitindi: he sometimes returns a goat. The Wajiji crews are also apt here to make a demand of beads for safe conduct to the island.

Having rounded in 2 or 3 hours the bluff northern horn to the western side of Ubwari island, and reposed at Mtuwwa, a dirty little bay resembling Mzimu, the crews paddle over, in 9 hours, to Murivumba, a gap in the rushes of the western mainland. This "port" is backed by a village of the Wabembe, the lords of the soil. They are correctly described in the 'Mombas Mission Map' as *Menschen-fresser—anthropophagi*: the habit arises from the savage and apathetic nature of the people, who devour, besides man, all kinds of carrion and vermin, grubs and insects, and abandon to wild growths a land of the richest and of the most prolific soil. Travellers have an aversion to these anthropophagi, who, dark and stunted, timid and degraded, appear more dangerous to the dead than to the living. Some men will not land amongst the Wabembe, deterred not only by the cannibal propensities of the people, but by the multitude of crocodiles, by the swarms of mosquitoes that haunt the reedy margins of the lake, and by the fatal nature of the climate, fatal even in Central Africa.

The sixth station, a small hamlet called Ngovi (?) and many other names, is reached, after paddling northwards for 10 hours, halts included. On the way dimly appears a small island close to the western bank, and the lake narrows about 5 miles, reducing its breadth to between 12 and 15 miles. At Ngovi, the southern frontier of Uvira, the stream of commerce begins to set strong; the people are comparatively civil; an old hovel is cleared for the merchant's reception; and the country suddenly becomes plentiful. Sheep and goats, fish-fry, poultry, and eggs, grain, manioc, and bird-pepper here gladden the sailor's heart.

The crew then lands at the seventh station, Muikamba (?) of Uvira. A neighbouring hamlet, a few hovels built behind a thick wind-wrung grove of plantains on a dwarf cliff, supplies provisions; and a reed-locked creek affords a clean strip of sand, where, when not flooded by the drift of easterly gales, canoes are drawn up for the night.

After a cruise of 3 to 4 hours from Muikamba, a fearful yelling from the paddlers, a braying of shawms, a tinkling of conical tom-toms, and a frantic dance of the captains of crews, who, with arms extended, turn, and wheel, and squat, and spring, with much gravity and importance, to the admiration of all beholders, announce to the crowds gathered on the shore the arrival of a new merchant at Uvira. This place is greatly frequented on account of the cheapness of its prices; it is the great dépôt, on the north of the Tanganyika, for ivory, slaves, and iron, and hardly a day elapses during the season without canoes coming in for merchandise or provisions.

At this point the lake narrows to about 8 miles, and opposite, in a high broken line, rise the mountains of inhospitable Urundi, apparently prolonged far beyond the northern extremity of the waters. The head turns north-north-westwards, and terminates, according to the most reliable authorities, about 15 statute, or 10 rectilinear and geo., miles northwards. Some reduce the distance to 6 hours of paddling, whilst others prolong it to a cruise of 2 days. Uvira, which is apparently the "Warua" of the 'Mombas Mission Map,'* is the Ultima Thule of lake-navigation. The only impediment to further progress towards the north and north-east is the terror entertained by the Wajiji of the various races who tenant the land. No Arab or Msawahili has yet been able, even in a sailing dhow, to explore the head of the Tanganyika, yet they deceive strangers by descriptions of the lake's head, told, as usual, with most attractive circumstance. Although an exorbitant sum was advanced, and still larger promises were made, by the East African Expedition to the Sultan Kannena and his crews, and although they had promised at Ujiji to make the attempt, when the time came for performance they rushed away from their employers at the very mention of the undertaking. This is, however, a characteristic of African travel: an explorer may be arrested at the very bourne of his journey, by a single stage, as effectually as if all the waves of the Atlantic or the sands of Arabia lay between. The sons of Maruta, Sultan of Uvira, and Lurinda, the chief of Gungu, who had, according to the general voice, visited the end of the Tanganyika, were profuse in their promises to assist in an explora-

* Warua is mentioned in the M. M. M. as a great ivory mart; this and the Wabembe cannibals are the only correct ethnographical positions in the whole circumference of the lake.

tion at first, but they presently proved that they had never intended to proceed beyond words.

The landing-place of Uvira is one of the broadest ledges of gently inclined ground between the waters and the western hills of the Tanganyika. This strip of sand and shingle, foully unclean,—the effect of many bivouacs,—is open to the surf, which when driven by the south-east wind, here a “blat” or small hurricane, sweeps over it to the verdure beyond. Boats therefore must be drawn up to a higher level, which boasts of a few tattered hovels, and temporary bough-boothies must be built in a dense mass of grass bisected by a natural gutter which drains off the showers daily falling amongst the hills. Yet travellers agree in asserting that Uvira is not insalubrious; appetite as well as sleep is rarely wanting, and the good cheer enables men to make light of the inclemencies of climate. The Mwami or Sultan Maruta owns a village on a neighbouring elevation; he invites strangers to his settlement, but they are deterred from visiting him by the violence of his people. The Wajiji indeed seem to consider the land eminently unsafe; they live as it were under arms, and nothing will induce them to venture away from their only escape—the canoes—which stand ready for launching when opportunity may demand. The sultan claims as blackmail twelve cloths, three coil-bracelets, and three fundo of coral beads: his children and brothers then follow his example, and they return sheep and fat goats here worth about one cloth each. Maruta’s sons are the noblest type of negroid seen near the Tanganyika, with symmetrical heads, regular features, and pleasing countenances: their well-made limbs and herculean frames of a shiny jet-black, displayed to advantage by open garments of red and dark-striped bark-cloth, are set off by opal-coloured eyeballs, by teeth like pearls, by a profusion of broad massive rings of ivory round the arms, and by conical ornaments of hippopotamus-tooth hanging from the neck. They are said to be hospitable and fond of strangers.

The imports to Uvira are the kitindi or brass wire armlets, salt, beads, tobacco, and cotton cloths. The exports are provisions, ivory, slaves, bark-cloth, and iron ware. Rice is not grown: holcus and maize are sold at one to two fundo of common beads per masuta or half-load, and one khete is sufficient in seasons of plenty to purchase five lbs. of manioc. Two and even three fowls may be bought for a khete; plantains of the large and coarse variety are common and cheap; and one cloth is bartered for two large earthen pots full of palm-oil. Ivory fetches its weight in brass wire; here the merchant expects for every 1000 dollars of outfit to receive 100 farasilah (3500 lbs.) of large tusks: this profit would be great were it not counterbalanced by the risk and the expense of transport. The prices of the slave market are very

fluctuating ; when business is dull, boys under ten years may be bought for four cloths, with five fundo of white and blue porcelain beads, and girls for six shukhah ; adults are seldom sold, as they are notoriously intractable and addicted to desertion. As a rule, at these distant places, as Uvira, Ufipa, and Marungu, slaves are somewhat cheaper than at Ujiji. Bark-cloths are generally in the market, and vary from one to three khete of coral beads. The principal industry of the Wavira is iron ware, the material for which is brought from the lands lying at a little distance to the west of the lake. The hoes, daggers, and small bells here cost half their usual price at Ujiji. The people also make neat panniers or baskets and light and pretty bowls cut out of various soft woods, dark and white ; these are also found, though rarely, at Ujiji and Kasenge.

This brief account of the navigation of the Tanganyika Lake may be concluded by a succinct notice of the physical and ethnological features of its circuit. According to the Wajiji, from their country to the Runangwa or Marungu River, which enters the lake at the southern point, there are twelve stages ; the Periplus numbers 120 khambi or stations, at most of which, however, provisions are not procurable. An extended list of fifty-three principal points was given by the guides ; it is omitted, as it contains nothing beyond mere names. There are, however, sixteen tribes and districts which claim attention : of these Ukaranga and Ujiji have already been described.

The kingdom of Urundi, which lies north of Ujiji, has a sea-face of about fifty miles ; a low strip of exceeding fertility, backed at short distances by a band of high green hill. This region, rising from the lake in a north-easterly direction, culminates into the equatorial mass of highlands which under the name of Karagwah forms the western spinal prolongation of the Lunar Mountains. The residence of the Mwami or chief sultan Mwezi is near the headstream of the Kitangure (Kitangule) or River of Karagwah, which rises at a place distant six days' march (sixty statute miles), and bearing north-east from the Tanganyika. His settlement, according to the Arabs, is of considerable extent ; the huts are built of rattan, and lions abound in the vicinity.

Urundi differs from the lake regions generally in being a strictly monarchical country, locally governed by Mutware or headmen, who transmit the customs and collections at stated periods to their suzerain. The Mwami, it is said, can gather in a short time a large host of warriors who are the terror of the neighbouring tribes. The Warundi are evidently natives of a high cold country ; they are probably the "white people resembling Abyssinians," and dwelling near the lake, of whom European geographers have heard from Zanzibar. The complexion varies from a tawny yellow, the

colour of the women, to a clear dark brown, which is so brightened by the daily use of ochre mixed with palm-oil that in few cases the real tint is discernible. The men tattoo with circles and lines like cupping-cuts; some burn up large shining lumps an inch in diameter, a decoration not a little resembling large boils; others chip the fore teeth like the Wanyamwezi. Their limbs are stout and well proportioned, many stand upwards of six feet high, and they bear the appearance of a manly and martial race. Their dress is the mbugu, worn in the loosest way; their arms are heavy spears, dudgeons, and unusually strong arrows; their ornaments are beads, brass-wire, and streaks of a carmine-coloured substance, like the red farinaceous powder called in India gulal, drawn across the head and forehead. The Waganga or priests of Urundi wear a curious hood, a thatch of long white grass or fibre, cut away at the face and allowed to depend behind over the shoulders; their half-naked figures, occasionally rattling with wooden clappers and capering causelessly like madmen, present a savage and horrid appearance. Honourable women wear long tobes of American domestics from below the arms to the ankles; they are followed by hosts of female slaves, and they preserve an exceptionally modest and decorous demeanour. Their features are of the rounded African type of beauty. Their necks and bosoms support a profusion of soli and other various-coloured beads; their foreheads are bound with frontlets, fillet-like bands of white and coral porcelain, about three fingers deep, a highly becoming ornament probably derived from Karagwah; and those who were seen by the Expedition invariably walked about with thin staves five or six feet long, pointed and knobbed as the walking-sticks of ancient Egypt.

At the northern extremity of the Urundi sea-face, and at the head of the Tanganyika, lies the land of Uzige; it is rarely visited except by the Lakists. This people, who, like their neighbours, cannot exist without some form of traffic, have, it is said, pursued the dows of the earlier Arab explorers with a flotilla of small canoes; it is probable that "country" traders would be better received. In their land, according to the guides, six rivers fall into the Tanganyika in due order from the east: the Kuryamavenge, the Molongwe, the Kavinvira, the Kariba, the Kibaiba, and westernmost the Rusizi or Lusizi. The latter is the main drain of the northern countries, and the best authorities, that is to say those nearest the spot, unanimously assert that it is an influent.

The races adjoining Uzige, namely, the Wavira on the north-western head of the Tanganyika, and their southern neighbours the Wabembe cannibals, have already been mentioned. The Wasenze inhabit the hills within or westwards of the Wabembe. Farther southwards and opposite Kawele in Ujiji are the Wayowwa highlanders; the lower maritime lands belonging to the Wagoma

supply the gigantic mvule-trees required for the largest canoes. These patriarchs of the forest are felled and shaped with little axes on the spot; when finished they are pushed and dragged down the slopes by the workmen, and are launched and paddled over to the shores of Ujiji.

South of the Wagoma are the Waguhha, who have been mentioned as the proprietors of the islets south-west of Ujiji. In their lands, according to the Arabs, is a lake or large water called Mikiziwá, whence the tribe upon its banks derives its name—Wamikiziwá. Through the country of the Waguhha lies the route to Uruwwa, present the western terminus of the Zanzibar trade. The merchant crossing the sea-arm which separates Kasenge from the mainland of the Tanganyika strikes towards Uruwwa; the line runs over low levels shelving towards the lake, cut by a reticulation of streams unfordable after rain, and varied by hilly and rolling ground. Provisions are everywhere procurable, but the people, like the Wavinza, are considered dangerous. At Uruwwa the khete or string of beads is half the size of that current in other countries. The price of ivory per frasilah is 15 miranga or 150 large khete of white, small blue, and lungenya, or coarse red porcelain beads, besides which a string of sungomaji (pigeon-egg beads), and a few sámesáme, or coral beads, are thrown in. The route numbers nine long or sixteen short stages; the general direction is south-westerly. Kiyombo, the Sultan of Uruwwa, is at present friendly with the Arabs; he trades in ivory, slaves, and a little copper from Katata or Katanga,* a district distant fifteen marches north-west of Usenda, the now well-known capital of the great chief Kazembe. On the Uruwwa route caravans are composed wholly of private slaves; the races of the Tanganyika will not

* "The trade of the Cazembe," says Mr. Cooley ('Geography of N'yassi,' p. 41), "lies chiefly in slaves, ivory, green stones (malachite?) and copper."

* The ivory is brought to him from the northern side of the Luapula; the green stones from the country called Catanga."

The grandfather of the present Kazembe, the great "Viceroy" of the country lying s.w. of the Tanganyika, and fendatory to Mwátá yá Nvo, the sovereign of "Uropua," was first visited by Dr. Lacerda, Governor of the Ríos de Sena, in 1798-99. The traveller died, however, after being nine months in the country, without recording the name and position of the African capital; the former was fixed by the expedition sent under Major Monteiro and Capt. Gamtito in 1831-32; it is variously pronounced Lucenda, Luenda, and by the Arabs Usenda, the difference being caused probably by dialect or inflexion. There is still some doubt about the position of the town. Mr. Macqueen places Usenda (by Major Monteiro's bearings and distances, 150 miles N., 27° w., from Dr. Lacerda's last observation by occultation of Jupiter's satellites, at the little town of Moiro Achinto, in $10^{\circ} 20' 35''$ s. lat., and $30^{\circ} 1' 48''$ e. long. of Greenwich) in $8^{\circ} 15'$ s. lat., and in $28^{\circ} 30'$ e. long. Dr. Livingstone supposes Usenda to lie 10 marches (60 statute miles) s.w. of the Tanganyika's southern extremity. Mr. Cooley makes Oha (Uhhá) and Lucenda fixed points in the same meridian, about 200 miles asunder, and represents the lake (the Tanganyika) distant about fifty miles from Lucenda, which he fixes at about $9^{\circ} 29'$ s. lat., and $29^{\circ} 16'$ e. long. This is not far from the position of the Tanganyika's southern extremity, laid down from Arab calculation at $9^{\circ} 20'$ s. lat. and 30° e. long.

carry loads, and the Wanyamwezi, unmaritime savages like the Kafirs, who have a mortal dread and abhorrence of water, refuse to advance beyond Ujiji. On account of its dangers, the thriving merchants have hitherto abandoned this line to debtors and desperate men.

South of Uguhha lies the unimportant tribe of Wat'hembwe, whose possessions are still within sight of Kawele in Ujiji. The race adjoining them is the Wakatete or Wakadete, and the country is called by the Arabs "Awwal Marungu," on the northern frontier of Marungu. Marungu is one of the most important divisions of the lands about the Tanganyika. Amayr bin Said el Shaksi, a sturdy old merchant from Oman, who, wrecked about twelve years ago on that part of the coast, had spent five months with the people living on roots and grasses, divides the region generically termed Marungu into three distinct provinces—Marungu to the north, Karungu in the centre, and Urungu on the south. Others mention a western Marungu, divided from the eastern by the Runangwa River, and they call the former in contradistinction Marungu Tafuna* from its sultan.

Western Marungu extends according to the Arabs in depth from Ut'hembwe to the Wabisa,† a tribe holding extensive lands westward of the Nyassa Lake. Travellers from Unyamwezi to K'hoporo meet, near Ufipa, caravans of the northern Wabisa en route to Kilwa. Between Marungu and Usenda, the capital of the Kazembe, the road lies through the district of Kavvire, distant seven marches; thence nine stages conduct them to the end of the

* These words suggest ideas of error; Marungu appearing to be rather the name of a race than of a country, and "Tafuna" simply means "eat." But, after lengthened consultations with the Arabs, no further information was elicited; the words are, therefore, written as they were given.

† Mr. Cooley ('Geography of Nyassi,' p. 7) conjectures that the Ambos or Imbies, Zimbas or Muzimbas, celebrated by the old Portuguese historians of Africa, on account of an irruption, in 1570, from the north as far as the Zambezi River, "were no other than the M'Bira, or Moviza, as they are called by the Portuguese who still occupy its (the Nyassa's) south-western banks." The proper name of this well-known tribe is Wábisa (in the sing. Mbísá), not Wábishá, as it is pronounced at Zanzibar, where every merchant knows "Bisha ivory." The Wábisa extend according to the Arabs from the west of the Nyassa or Kilwa Lake towards the south of the Tanganyika. They dress in bark-cloth, carry down their fine ivory to Tete and Kilimani (Quillimane); and every four or five years a caravan appears at Kilwa, where, confounding their hosts with the Portuguese, they call every Arab mzungu, or white man. They are a semi-pastoral tribe, fond of commerce, and said to be civil and hospitable to strangers. It must be observed that those geographers are in error, who connect the Wabisa with the Wanyamwezi; they are distinct in manners and appearance, habits and language. Mr. Cooley, for instance, opines that the "Moviza" and the "Monomoezi" are similar in physical character and national marks. The only mark known to the Wabisa is the kishshah, or crest of hair; not, as Khamisi Wa Tani asserted to Mr. Cooley ('Inner Africa Laid Open,' p. 61), a dotted line on the nose and forehead; whereas, the Wanyamwezi, as has been seen, puncture the skin. Thus Lacerda calls the "Moviza," a frizzled and periwigged people; the Arabs also deny the assertion of Pereira, recorded by Bowdich, that the Moviza, like the Wahiao, file their teeth.

journey. There is an upper land-route through Uruwwa for those travelling from Ujiji to Usenda, and many caravans have passed from Unyanyembe direct through K'hokoro and Ufipa, to the dominions of the Kazembe.*

Marungu is described by the Arabs as a hilly country like Ujiji and Uvira: the precincts of the lake, however, are here less bold than the opposite shore. Off the coast lie four or five islands, two of which, according to the Arabs, are of considerable size: the only name given is Ukungwe, which appears however to be rather the name of the farthest point visible from Kasenge, and bearing S. 58° E. On the north-western frontier of Marungu, and about three marches from the lake, is the district called Utumbara, from Mtumbara its sultan. This Utumbara, which must not be confounded with the district of the same name in Northern Unyamwezi, is said by the Arabs to be fifteen to twenty days' march from Usenda.

Marungu, though considered dangerous, has often been visited by Arab merchants. After touching at Kasenge they coast along Uguhha for four days, not daring to land there in consequence of an event that happened about 1841-42. A large Arab caravan of 200 armed slaves, led by Mohammed bin Salih and Sulayman bin Nasir, and with four coadjutors, Abd el Al and Ibn Habib, Shahs of Bahrayn,† Nasir and Rashid bin Salim el Harisi (who soon afterwards died at Marungu) took boat to Marungu, and in due time arrived at Usenda. They completed their cargo, and were returning in a single boat, when they were persuaded by the Sultan Mtumbara to land, and to assist him in annihilating a neighbour, Sámi or Kipyoká, living at about one day's march from the lake. The Arabs, aided by Africans, attacked a boma, or palisade, where, bursting in, they found Sámi's brother "sitting upon pombe" with his wife. The villagers poured in a shower of arrows, to which the Arabs replied by shooting down the happy couple over their cups. Sámi's people fled, but presently returning they massacred the slaves of the Arabs, who were obliged to take refuge in the grass till aid was afforded by their employer Mtumbara.

* According to the Arabs, the Kazembe visited by the Portuguese expedition in 1831 died about 1837, and was succeeded by his son the present chief. He is described as a man of middle age, of light-coloured complexion, handsomely dressed in a Surat cap, silk coat, and embroidered loin-cloth; he is rich in copper, ivory, and slaves, cloth and furniture, muskets and gunpowder. Many Arabs, probably half-castes, are said to be living with him, held in high honour, and the medium of intercourse is the Kisawahili. Though he has many wives, he allows his subjects but one each, punishes both adulterer and adulteress to death, and punishes offenders generally by gouging out one or both eyes.

† It is not improbable that this man may be the "Ben Habib" met with a party of Arabs by Dr. Livingstone at Linyanti of the Makololo. About six years ago his father left Zanzibar with a caravan of 100 musketeers to seek his son; he crossed over from Ujiji to Marungu, but has never been heard of since that time.

Sámá, thus victorious, burned the Arabs' boat, and, compelling the merchants to return to Usenda, seized the first opportunity of slaying his rival. The expatriated Arabs have found means of sending letters to their friends, but they appear unable to leave the country. Their correspondence declares them to be living in favour with the Kazembe, who has presented them with large rice-shambas, that they have collected ivory and copper in large quantities, but that they are unable to find porters. This being highly improbable in a land where in 1807 a slave cost five, and a tusk of ivory six or seven squares of Indian piece-goods,* and as, moreover, several merchants, deluded by exaggerated accounts of the Kazembe's wealth and liberality, intrusted these men with considerable ventures, of which no tidings have as yet reached the creditors' ears, the more acute Arabs suspect that their countrymen are living from hand to mouth about Usenda, and are cultivating the land with little prospect of quitting it.

The people of Marungu are called Wámbozwá by the Arabs; they are subject to no king, but live under local rulers, and are ever at war with their neighbours. They are a dark and plain, a wild and uncomely race. Amongst these people is observed a custom which connects them with the Wangindo, Wahiao, and the slave races dwelling inland from Kilwa. They pierce the upper lip and gradually enlarge the aperture till the end projects in a kind of bill beyond the nose and chin, giving to the countenance a peculiar duck-like appearance. The Arabs, who abhor this hideous vagary of fashion, scarify the sides of the hole and attempt to make the flesh grow by the application of rock-salt. The people of Marungu, however, are little valued as slaves; they are surly and stubborn, exceedingly depraved, and addicted to desertion.

Crossing the Runangwa or Marungu River, which, draining the southern countries towards the Tanganyika, is represented to equal the Malagarazi in volume, the traveller passes through the districts of Marungu Tafuna, Ubeyye, and Iwemba. Thence turning to the north, he enters the country of the Wapoka, between whom and the lake lie the Wasowwa and the Wafipa. This coast is separated from the opposite shore by a voyage of fourteen hours; it is a hilly expanse divided by low plains, where men swarm according to the natives "like ants." At a short distance from the shore lies the Mvuma group, seven rocks or islets, three of which are considerable in size, and the largest, shaped like a cone, breeds goats in plenty, whilst the sea around is rich in fish. There are other islets in the neighbourhood, but none are of importance.

Ufipa is an extensive district fertilized by many rivers. It produces grain in abundance, and the wild rice is of excellent flavour.

* This is stated to be the case by Pedro João Baptista, the Pombeiro, who crossed Africa from Angola to Monomotapa and the Indian Ocean in 1802-1814.

Cattle abounded there before the Watuta, who held part of the country, began a system of plunder and waste, which ended in their emigration to the north of Uvinza; cows, formerly purchased for a few strings of cheap white beads, are now rare and dear. The Wafipa are a wild but kindly people, who seldom carry arms: they have ever welcomed the merchants that visited them for slaves and ivory, and they are subject to four or five principal chiefs. The servile specimens seen at Unyanyembe were more like the jungle races of the Deccan than Africans—small and short, sooty and shrunken men, so timid, ignorant, and suspicious, that it was found impossible to obtain from them the simplest specimen of their dialect. Some of them, like the Wanyoro, had extracted all the lower incisors.

North of the Wafipa, according to the Arabs, lies another tribe, called Wat'hembe (?), an offshoot from the people on the opposite side of the Tanganyika. Here the lake receives a small river called the Murunguvu (?). The circuit of the Tanganyika concludes with the Watongwe, called from their sultan or their founder Watongwe Kapana. In clear weather their long promontory is the farthest point visible from Kawele in Ujiji; and their lands extend northwards to Ukaranga and the Malagarazi River.

Such are the most important details culled from a mass of Arab oral geography: they are offered to the reader without any guarantee of correctness. The principal authorities are the Shaykh Snay bin Amir el Harisi and Amayr bin Said el Shaksi; the latter was an eye-witness. All the vague accounts noted down from casual informants were submitted to them for an imprimatur. Their knowledge and experience surpassing those of others, it was judged better to record information upon trust from them only, rather than to heap together reliable and unreliable details, and as some travellers do, by striking out a medium, inevitably to confuse fact with fiction. Yet it is the explorer's unpleasant duty throughout these lands to doubt everything that has not been subjected to his own eyes. The boldest might look upon the 'Mombas Mission Map' and tremble.

CHAPTER IX.

USUKUMA AND THE NYANZA OR UKEREWEE LAKE.

The term Usukuma has been explained to signify the lands lying to the north of Unyamwezi: it expresses a conventional and political rather than a geographical division. This region, which contains the mixed population between the district of Unyanyembe and

the Nyanza Lake, is contained within the parallels of 5° and $2^{\circ} 24'$ s. lat. The Arabs of Kazeh estimated the journey at sixteen marches, which, as the distance is about 226 miles, would give the excessive rate of fourteen miles per diem. Captain Speke occupied twenty-five days with halts. The breadth can scarcely be estimated. The altitude ranges from 3500 to 4000 feet above the sea-level. The route was travelled over in July and August of 1858 by Captain Speke,* who discovered the Nyanza or Ukerewe Lake, of which accurate reports, gathered from the Arabs of Kazeh, had been previously transmitted to the Royal Geographical Society. The following description of the route and the general features of the country are extracted from his journals, with additions and alterations supplied by Arab informants, especially by Salim bin Rashid el Manzuri.

The superficial configuration of the country, like that of Unyamwezi generally, is a rolling plateau of primitive and sandstone formation, with lower levels of brown clay or sand mixed with vegetable matter. The undulations of ground were compared by the explorer to long waves, varying from three to six miles in length, with ascents and descents equally gradual, and the low rocky hills, irregular, as if disposed by conflicting currents, to small curling breakers of a short and chopping sea. In some places the huge outcrops of syenitic granite, common in Ugogo and its flanking deserts, appear towering above the tallest vegetation. The hill-summits are nude, the sides are dotted with stunted trees and a thin bush of cactus and aloe. The plains are veiled with a profuse growth, and, like Unyamwezi, they are deficient in timber—only the Adansonia and in parts the palmyra attaining any size—whilst strips and seams of jungle alternate with patches of cultivation and with clearings of extreme fertility. Usukuma is perhaps the most populous province and the richest as regards cattle in this part of Africa: it owes its pre-eminence to the excellence and abundance of spring-water, which is found so near the surface that wells are not sunk. No rivers and but few nullahs appear till near the lake.

* After some delay, caused by the disturbed state of the northern country, Capt. Speke, aided by the author, collected a gang of 20 Pagazi, and, escorted by ten Baloch matchlockmen, left Kazeh on the 11th of July. Having performed a successful journey, which only time had limited, and having marched about 500 miles through a wild country in 45 days, halts included, he returned to Kazeh on the 25th of August. During that period his expenses amounted to about 200 dollars (= 40L.), the principal items of which were these.—As a bribe to the Baloch, 150 shukkabs of American domestics (= 100 dollars at the valuation of Unyanyembe), and 30 lbs. of white beads for rations (= 12 dollars), were distributed. The porters received in pay 75 shukkah (50 dollars), and as rations for the whole party 60 lbs. of white beads (25 dollars). The extras were blackmail, and wages to guides, 29 shukkah of white and blue cotton, one sobari, one dabwani, and two barsati—check-stuffs—worth in all 23 dollars. The expense of travelling through Usukuma is rather higher than in the beaten track from the coast to Ujiji, where the people bring necessaries for sale, and have learned to moderate their demands.

The climate of this region is comparatively pleasant. There are no unhealthy exhalations nor putrid fens, no thermical extremes nor surprises; in fact, the air is that of a high dry land. Travellers suffer at first from the change; but when acclimatized they remark that sleep and appetite are improved. No difficulty is experienced in walking from daybreak till 9 A.M.; from 10 A.M. to 4 P.M. the shade of a hut is necessary for comfort, and at night, especially in a tent, a blanket is required even in the month of August. The country suffers from the cold easterly and south-easterly winds, which cause so much disease in Unyamwezi. It has a long wet season. The preliminary showers, accompanied with loud thunder and vivid lightning, begin in August or September;* at the end of this month the masika sets in, and, continuing with breaks till May, divides the year into unequal parts of five dry and seven rainy months. As in Unyanyembe, the dews are light, and the rays of the sun are tempered by a thin veil of milky vapour.

The geology of this region is remarkable only for a rich supply of iron. It is not mined: the Wafyoma, a sub-tribe of the Wasumbwa,† itself a tribe of the Wanyamwezi, and other servile races, pick up from the hill-sides the ferruginous stone, which they smelt by the rudest contrivances. The greatest abundance was observed in the district of Nera, whence the vein probably extends westward to Utumbara, which exports the raw iron worked at Msene in Western Unyamwezi. In parts a thin layer of salt effloresces from the plains; Usukuma, however, depends upon Ugogo and Uvinza for its supplies of this article, which consequently is scarce and expensive. A variety of indications would suggest the existence of coal in these regions: the plains extend to the base of the Karagwah highlands, and their component rocks are micaceous and ferruginous sandstones, with argillaceous layers, whose red aspect argues the presence of iron oxide.

Iron is the staple produce of the north, ivory of the east, and cattle and the cereals abound throughout the land. The harvest season is in July and August, and such is the plenty of maize, millet, and holeus, that the population can afford almost to live upon pombe, which consumes more grain than beer ever did in England. Water-melons thrive; there are several kinds of pulse; and the vegetables are represented by sweet potatoes, tomatos, manioc, pumpkins, and cucumbers. Tobacco is grown in the richest soils; and the cotton about Umanda and near the southern extremity of the Nyanza Lake is considered by the

* Capt. Speke records two showers on the 11th and the 22nd of August, accompanied with thunder and lightning. The Arabs of Kazeh called this the vuli or little rains, and declared that it usually begins about the Nayruz (in 1858 the 29th of August).

† See Chaps. VI. and XII.

Arabs a superior article. In parts the land appears almost over-stocked with cattle, which, however, the "Armentarius Afer" will not sell on account of his fondness for curded milk; its cooling and thirst-quenching properties cause this "dahi" to be preferred to the fresh produce. The most numerous and the largest herds are at the Msalala district of Umanda and at Nera, in the vicinity of the Lake. Sheep and goats also are not readily parted with, the people sensibly preferring their skins to the flimsy cottons imported from the coast. Cows are seldom to be purchased for less than three doti; bullocks fetch two-thirds of that price; whilst three small or one large goat or sheep may be bought for one doti, or its equivalent, two khete of coral beads. In 1858 the rage for gunpowder was such that a few charges went as far as a cotton cloth. Beads also throughout this region bear a disproportionate value. Thus, where one or two khete of coral-coloured porcelains—of which thirty are elsewhere equivalent to the shukkah—purchased a goat, a cloth fetched only three or four fowls. Moreover, the people were found to be fastidious as regards their jewellery; in many places they rejected the khanyera or white porcelains, and they invariably showed preference for the coral-red, the pink, and the blue varieties.

The wild animals of Usukuma are, on the N.E., a few elephants, whose ivories are carried either to Unyanyembe or to Burkene, on the Mombasah route; hippopotami near the lake do nightly damage to the fields; rhinoceroses, with fine large horns, range the jungles to the s. and s.e. of the Nyanza, and everywhere are giraffe, quagga (?), zebras, and herds of antelope. In some parts ostriches abound; their feathers found in the bush,—they are not hunted,—decorate the tufty polls of the people. The Egyptian goose is not unfrequent. In Usukuma was observed a fine large species of goose (*Sakidornis melanota*), with a black plume, white feathers under the lower mandible, and a lobule or gristly excrescence in a semicircular form, like a cock's comb trimmed of its dentations, rising from the base of the bill in an arc from 1 in. to 1·5 in. in height, and terminating close behind the horny and incurved point of the beak. Crested cranes and floriken, guinea-fowls, partridges, and rock-pigeons are abundant in the northern lands. Fish is caught by the people near the Nyanza; but it is generally offered for sale in a state unfit for eating. The only specimens seen were a kind of winnow and a perch-like animal, not uncommon in the waters of the Tanganjika. Crocodiles are found in the Nyanza Lake.

The various tribes dwelling between Unyanyembe and the Nyanza Lake, though boisterous and turbulent, are prevented by considerations of self-interest, with which mingles a certain fear of retribution, from plundering and molesting travellers. They are quarrelsome over their potations; but the intervention of the Sultan,

which is almost invariably for good, suffices to prevent serious brawls. The chief prides himself upon receiving strangers as visitors; he is vexed and hurt if they pass his village without entering it,* and he generally acknowledges blackmail by a return-present. This northern road is not, like the great western route, one vast slave-path; and the semi-agricultural state of the people distinguishes them from the purely pastoral tribes. Here the commercial traveller's advent is hailed as a good omen; men, women, and children assemble to welcome him; he may go wherever and he may see whatever he pleases; his hosts entreat him to settle amongst them; and as he wends his way they give him the friendly "kua-heri" or farewell. They are not yet civilized enough to hate foreigners. On the beaten slave-path the Sultans have learned to demand from the merchants presents which are virtually a bribe for forbearance from robbing; and their subjects, presuming upon the stranger's profits, treat him with insolence and indignity. The wild Wamasai and Wakwafi, the starving Somal, and the wretched Galla, on the other hand, obey the law of nature, which amongst barbarians makes the least valuable possessions to be the most jealously guarded. They admit no stranger, unless escorted by some influential clansman, who is security for and spy upon all his actions; even with this passport he is watched with the eyes of Argus. Every word, deed, and movement will become the subject of grave debate, and be misconstrued to the traveller's disadvantage; the more absurd the decision the more readily and widely it is believed and diffused. Woe to the wight detected ascending a hill or visiting a plain too often! he is assuredly bewitching the people, or planning to build a fort for the mastery of those fair lands whose wretched owners exist in a state of semi-starvation. There, too, bloodshed by any means, even by the cowardly murder of a sleeping guest, is a gest ever to be boasted of, a heroic deed which wins for the warrior the High Order of the Rish or ostrich-feather. Such is travel among the slave races and the pastoral tribes; and so different is it amongst the Beahwana, the Makololo, the Wasukuma, and similar people in the African interior.

The direct route from Unyanyembe lies eastward of north: it abuts, after fifteen long or twenty short marches, upon the southeastern angle of the Nyanza. The road through Usukuma, explored by Captain Speke in 1858, was a line deflecting westward to avoid the disturbed portions of Umanda. A general list of stations, with the time occupied in actual marching, is given

* Some sultans will insist that the stranger who pitches tent in the jungle should rise up and enter the settlement. A variety of motives—honour, profit, curiosity, and love of society—are at the bottom of this custom in uncivilized life. So amongst the Boers of the Cape and the Portuguese half-castes of Western Africa, it is a notable slight to pass a farm or a village without entering it.

below;* and some details concerning each stage will enable the reader to form a more distinct idea of its physical and political features than any general description, however minute, could convey.

The first stage from Kazeh, crossing deep soil, for the most part well cultivated, ends at a small village, where a hut is cleared out for travellers. The second march, to Ulikampuri, passes over, according to the Arabs, the Gombe nullah, which during the wet monsoon drains Central Unyamwezi into the Malagarazi River. Captain Speke observed on this stage a broad and sloping valley of tree-jungle, in which pools occasionally occurred; but the ground seemed to rise towards the west, and there to be limited by high land. Ulikampuri is inhabited by a tribe called Wasagari, who extend to the eastward, where they mingle with the Wanyamwezi. To Unyambewa, the fourth station, the track spans a dead level, well cultivated for the first five miles, and winds amongst low straggling hills, which, nowhere obstructing passage, presently draw off. Thence the road runs through a barren of tall thin thorns, with occasional clearings for cultivation, crosses the long and gradually-rising waves of a rich and populous land, and finally draws near to a line of dwarf hill stretching away to the south-east.

Unyambewa† was in 1858 governed by a Mana-Mteme‡ (literally a king's offspring), a Sultana, by name Unguvu: there is no law Salique in these lands, and, in default of male heirs, the chief's principal widow, when there are several, succeeds to his authority. The lady is described as a short stout dame, not far from sixty, active, energetic, and laughter-loving: her dress was an old barsati or Indian cloth, presented by some travelling trader; she wore copper wire upon her fingers, her arms were decorated with

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| * 1. Kazeh to Northern Unyanyembe,
1 h. 40 m. | 10. Msalala to Mgogwa, 2 h. 10 m. |
| 2. To Ulikampuri, 5 h. 15m. | 11. To Senagongo, 3 h. 10 m. |
| 3. " Southern Unyambewa, 4 h.
40 m. | 12. " K'hahama, 4 h. 25 m. |
| 4. " Northern Unyambewa, 2 h.
50 m. | 13. " Nindo, 6 h. 50 m. |
| 5. " Ibanda, 2 h. 40 m. | 14. " Salawe, 6 h. 40 m. |
| 6. " Ukamba of Umunda, 4 h.
15 m. | 15. " Southern Nera, 5 h. 5 m. |
| 7. " Uyombo, 4 h. 55 m. | 16. " Northern Nera, 4 h. 45 m. |
| 8. " Ukuni, 3 h. 40 m. | 17. " Southern Urims, 2 h. 55 m. |
| 9. " Msalala, 4 h. 10 m. | 18. " Northern Urims, 2 h. 45 m. |
| | 19. " Ukumbi, 4 h. 25 m. |
| | 20. " Isamiru, 5 h. 5 m. |
| | 21. " Mwanza, 2 h. 35 m. |

† This and several other names occur in Mr. Cooley's 'Geography of N'yassi,' p. 28. "Beyond Ocanga (Usanga, to the south of Unyamwezi) are Misarara (Msalala), Onambiwa (Unyambewa), and Ebunda (Ibands), whether towns or kingdoms we know not."

‡ M'ana Mteme, contracted from M'ana wa Mteme, has been mentioned as the title of the Sultan's children in Ugogo, synonymous with M'ana Mundewa in Khutu and Usagara.

solid brass bangles, and a foot-depth of "sambo" concealed her ankles; from her neck depended an assortment of brass and copper, horn, ivory, and wooden ornaments, talismans, and souvenirs. Her village, in a cultivated plain, was a stout palisade, containing twenty or thirty thatched huts, conical and circular, with ample shady eaves, divided into parcels of four or five by walls of stakes, forming straight and bending alleys for thoroughfare, with courts and screens for privacy, and fences for protection of cattle. The Sultana presented a bullock to the traveller, and received in return a small present of cloth, after which her managing-man put in a claim for a fundo of beads.

To the fertile plain of Ibanda, the fifth station, the path, which is easy and regular, traverses well-cultivated grounds, interrupted by a close jungle of small trees. Thence it crosses a low ridge, trending gradually from the east, and a descent leads to the sixth station, Ukamba, a well-cleared and populous valley. In this part of the country there is a great mixture of tribes. The Wasongo lie about twelve miles eastward, the Wakwanda twenty miles to the west, of Ukamba. Between these two, and commencing about seven miles south of Ukamba, is the territory of Umada, a long oval, with a length of eighty miles, and a breadth of about two marches; the lay of its greater diameter is from north-west to south-east.

Umada is inhabited by a turbulent and quarrelsome race, combining the unsettled and predatory habits of the pastoral with the debauchery and greed of gain that distinguish the half-agricultural peoples. The Wamanda speak a different language from their Wanyamwezi and other neighbours; and, like the rest of the Wasukuma, they occasionally send caravans to the east coast, where some of their sultans are now well known. In 1858 they were involved in a war of succession by the death of a well-known chief, who left three sons, and consequently three claimants to power. The elder, by spreading reports that certain Arab merchants detained at this village had engaged to assist him, terrified the cadets into acknowledging themselves his vassals. The two latter, after making their formal submission, returned at once to their former independence, and left no art untried to inveigle strangers and to raise reports of Arab alliance. Kuruá, the youngest brother, who had collected three old Tower muskets, and supplied himself with ammunition by selling cattle at Kazeh, received the explorer with emphatic kindness. The war had fallen heavily upon the flocks and herds, and the unhappy Warendo, a little tribe on the northern frontier of Umada, had been obliged to shelter their cows in the northern and north-eastern hills, 50 or 60 miles distant, a sore sacrifice to a people so fond of milk.

The Wamanda are a manly race; they turn fiercely at a push

or a blow, from which others would shrink timidly away ; and if grudged the indulgence of unlimited staring, they wax quarrelsome. Their arms are bows and arrows, assegais, knives, and knobsticks. Unlike the Wanyamwezi, they protect their bodies with hide shields, about 5 feet long by 18 inches in breadth, striped and daubed with ochreish and variously coloured earths around the centre, where wooden knobs, disposed in squares, project like an umbo or boss. To judge from the zumo, or war-ceremony, with which distinguished strangers are received, their tactics consist principally of irregular movements to escape the missiles of the enemy, or to draw off his fire. The parade-ground is a mass of moving humanity. Now they keep their ground prancing and curveting, with bodies swaying to and fro ; sometimes they retreat, at other times they advance with leaps and bounds, first on one, then on the opposite side, to the assault, with nocked arrows or quivering spears, projecting their shields, assuming the most fantastic attitudes, and terrifying the enemy with maniacal gestures, while stones and knobsticks fly through the air. They have no war-cry, but a fearful volley of independent shouts and screams accompanies every fresh evolution. And so fond are the Wamanda of dancing, that after a long march, and a toilsome display like that alluded to, they will fly to their drums, rush about, jump, and nautch, as if hung on wires, to an unharmonious chorus of collective voices, till darkness closes upon the earth. When not fighting or cultivating, they spend their days, between 10 A.M. and 4 P.M., in intoxication ; and from the afternoon to midnight they drum, sing, and dance. During drinking-hours they become wholly unfit for any but African society. The mteme, or chiefs, swarm over the land. They are jealous of their neighbours, with whom they seldom, if ever, agree ; but they are respected by their people, and they are powerful to forward or to arrest the traveller's progress. These sultans live by the sweat of their slaves, and increase their property by sending ivories to the coast. They traffic with the Arabs of Kazeh, who give the usual returns for their cattle, and eke out the revenue with "windfalls," percentages of plunder, seizures in battle, and blackmail from travellers.

The Wamanda have some curious superstitions ; they object to a dead Guinea-fowl being brought unplucked into the village ; and they are addicted to the display of devilry, common throughout Unyamwezi and Karagwah. A party of twenty to thirty, chiefly women, called Wábándwá (in the singular M'bándwá), proceed about the village balancing grain-pans and wooden ladles upon their heads, and holding green twigs in their right hands, with a mincing, jogging step, half-jump and half-dance, and a drawling, droning, humming chorus, to which the arms and hands, and the swaying of the body, keep time. This procession moves slowly

along the passages formed by palisades, and, delaying in front of each house, performs its choicest evolutions. Men, and even the chiefs, arise and sometimes join in the dance. The idea is, that a p'hepo, or disembodied spirit, whose name is Waswezi (?), enables those possessed to foresee the event of wars and journeys, the advance of caravans, the procreation of children, and the occurrence of rain, together with similar secrets of time. In making the sare, or brotherhood, the Wasukuma draw blood from above the left knee, as amongst the Wanyamwezi.

The seventh station is a hilly but fertile district, belonging to the Wayombo, whose chief is one Mihambo, of the Wamanda tribe. He received two plain cloths in return for his present—a sheep. From this point a direct road runs northwards through Sarenge and K'hahama: in 1858 it was one of the three districts disordered by civil war. A well-cultivated country, open, but sprinkled with a few hills, followed by a rough track, close with trees, leads hence to Ukuni, also a district of the Wayombo, who, when the Wamanda are occupied in fighting, make raids upon their cattle. The next march, passing out of the Wayombo by a winding and indirect line, again enters the land of Umanda, at a district called Msalala. The country is at first an extensive plain, broken by small and irregularly disposed hills. In some parts cultivation and fine trees appear; in others the surface is encrusted with a thin coat of salt; in others it is rolling ground, broken with huge outcrops of granite. Msalala is a large district, in 1858 the second focus of petty war. At that point the track, which had left the disturbed places on the right or eastward, passed through the combatants and turned abruptly to the north, leaving on the left hand the third scene of action. The Wagolo tribe lie 20 miles east, and the Wasioma (Wafyoma ?) 30 miles west, of Msalala. The land is here fertile and populous. If Ugogo boasts of its thousands, Msalala can vaunt its tens of thousands. The land, moreover, is peculiarly rich in cattle.

The tenth station is Mgogwa, a village of Msalala belonging to Kurua, the young chief before alluded to. This country is in some parts white with salt, which is probably too nitrous for use; in others it is admirably fertile, producing cotton in abundance, and wanting only industry to satisfy the agriculturist however covetous. Kurua began by sending an armed party to obstruct the explorer, saying that the route was rendered dangerous by his brother, and that the intentions of a stranger could be known only by his actions. He manifestly desired to use the influence of a great mundewa,* or commandant of a caravan, and perhaps to strike by a little gunpowder terror into the hearts of his enemies.

* Mundewa is the generally known term in these regions for a merchant or the proprietor of a caravan, who of course ranks with the chiefs of the country.

He obtained only a few cloths in exchange for his present of a bullock. Kurua, however, received Captain Speke hospitably on his return, sold him some cattle, and returned with him to Unyanyembe driving cows, which he had promised to barter for ammunition. But when arrived he so raised his prices, that it was found impossible to conclude a bargain.

Senagongo, the eleventh station, was reached by a circuitous track, to avoid the seat of war, through a fair and fertile country, striped and patched with jungle; open to the east, and on the west somewhat close, with low, irregular hills. This sub-district of Msalala was in 1858 the domain of Sultan Kinoni the cadet, allied with Kurua against the pretensions of their eldest brother. He also showed the stranger those little marks of attention which alone can make such journeys pleasant. His subjects, however, are not less noisy and boisterous, inquisitive and quarrelsome, than the other Wamanda. The careful fencing of their settlements argues a necessity for precaution, and the energy engendered by the strongest of moral stimulants—personal danger—habituates them to activity. At Senagongo a bullock was presented to, and a return present was received from, the explorer.

From Senagongo the path passed the direct route from Unyanyembe to the Nyanza, and struck eastwards to avoid another seat of disturbance. Here the country is in long waves, upon which the cereals alternate with wild growth. The twelfth station is the district of K'bahama, the northern frontier of Umanda. When visited in 1858, it was abandoned by the people, owing to the wars in its vicinity. The next march leads through a flat country overgrown with thorny bush and patches of long, clear grass, a wilderness, rather deserted than desert, where elephant, deer, and ostriches abound. The people have placed their families and household stuff beyond the reach of the Wamanda, and, retiring to some distant asylum for the night, they stealthily revisit and cultivate the fields by day. A few villages in a district called Nindo lie at the end of this march. The fourteenth station, the Salawe country of the Wa'umba tribe, is reached, after a long march through a waterless waste similar to the former. About 30 miles to the east are the Wanatiya (?) people, and at an equal distance westward the Wazinza. This wilderness is also rendered dangerous by plundering parties of the Wamanda, and the villagers on the outskirts remove their cattle to safer places. In peaceful times herds are driven for sale from these lands to Kazeh and other parts of Unyanyembe. Trade, however, appears dull about Nindo and Salawe. Few necks are decorated with beads, and the only garment is the loose apron, or the short kilt of goatskin, in Eastern Africa a sign of barbarism in the community, or poverty in the individual.

From Salawe to Northern Nera, the sixteenth station, the track spans 8 miles of cultivated land, passes up a broad valley, and then traversing a jungle of thorn and grass abuts upon well-cultivated plains, from which emerge low stony hills and huge tower-like outcrops of granite. This appears to be the garden of Usukuma : green trees crown the large brown rocks of the little rises, tall palmyras and numerous villages are scattered over lands long subject to the hoe, and large flocks and herds ranging over the pastures give a peculiar charm of peaceful plenty to the scenery. Nera is a district of great mineral wealth. According to the Arabs, one large vein of iron extends from this district to the north of Msene. The ironstone is picked up from the hill-sides, heaps of the ore are piled up before the cottage doors, and the little forges of the smelter supply Unyanyembe with hoes and other implements. The Wanyamwezi porters never fail to invest their hire in a stock of jembe, which they buy at the lowest prices, two being generally procurable for a white shukkah, and they sell their venture for double or treble after their return home. The working of iron at Nera is confined to certain villages, the others occupy themselves exclusively with cultivation and cattle.*

From Nera the road leads to Urima of the Wisabi tribe, which forms the seventeenth and eighteenth stations. The first half is a land of long waves generally cultivated and rich in flocks and herds ; westward is a scatter of dwarf hills, and in that direction, about four miles distant, a large piece of water,—the head of the Nyanza's southern creek,—is discerned for the first time. At the sixth mile the path crosses a deep and muddy nullah running from the S.E. into the creek, which also receives during the rains the waters of the Muingwirá, the main drain of the western districts of Msalala. The latter half of the march crosses a well-cultivated country knobbed with hillocks, which, like the archipelago beyond the creek and the eminences near the Lower Nile, become islands during the inundation ; the lowlands lying at three or four marches from the lake are then deeply submerged by the floods of the Muingwirá, and travelling is arrested for some months.

From Urima—where the sultan proved himself the sole base exception to the civility and courtesy of his brother chiefs—low jungly ground leads to a village at the base of little hills ; the remainder is rough but well cultivated. At the nineteenth station, Ukumbi of the Walaswanda tribe, the creek broadens out, and the summits of the rocky and tufted hills emerging from its blue waters

* Six other places, besides Usui, Nera, and Urima, are mentioned by the Arabs as supplying iron on this line of E. Africa. 1, Kawele, a district s. of Kazeh ; 2, Utumbara ; 3, Usorombo, a district of Wasumbwa Wanyamwezi, lying five marches n. e. of Msene ; 4, Usonge, distant two marches from Msene on the road to Utumbara ; 5, Karagwah, or rather the Kittara district ; and 6, Uvira, on the n. w. of the Lake Tanganyika.

become distinctly visible. From Ukumbi to Isamiru, the twentieth stage, a tortuous track, spanning a hilly but fertile land, winds along the creek, which here widens to twelve or fourteen miles : to the north-west a glorious sea-horizon now gladdens the eyes. The road crosses a low line of hills, enters a more open and cultivated country, and, leaving the creek westward, coasts the lake and terminates at Mwánza, the twenty-first station. This small district of Wasukuma occupies a nearly central position at the southern extremity of the Nyanza Lake.

From Mwanza Captain Speke, finding boats distant, and the lake out of prospect, marched three miles eastward to a village inhabited by Mansur, a half-caste and outcast Arab, who for sundry offences had been flogged out of Kazeh by his compatriots. He behaved with civility and left a favourable impression upon his guest. The proceeding, however, irritated Mahayya, the chief of Mwanza, who forthwith forbade his subjects to sell provisions to the caravan. Captain Speke, before setting out to observe from a hill, about three miles to the east of his night's lodgings, sent a deputation with excuses for having avoided the sultan's house, and accompanied it with a small present of cloth, which seems to have proved an efficient pacifier. Moreover, after a day's halt amongst clouds of mosquitoes, he began his return march to Unyanyembe by lodging with Mahayya. The sultan received him with great courtesy, cleared a house, and supplied him with eggs and milk ; both the chief and Mansur, possibly urged thereto by the Baloch, strongly dissuaded the guest from visiting the dangerous Sultan Machunda of Ukerewe. They spread a report that Salim bin Rashid, a wealthy Coast-Arab merchant, had been attacked and plundered at Ukerewe in spite of his sixty muskets, and was at the time detained for ransom. The lie was told with perfect circumstance. When, however, it was repeated to the Arabs of Kazeh they only smiled their doubt, and the falsehood presently became manifest by the safe return of Salim bin Rashid, who had met with nothing but kindness at Ukerewe. The merchants, however, declared Mahayya to be an "ayyar" or rascal of the first water, smooth of speech, frank in manner, but greedy, treacherous, and violent : they now sedulously avoid his district. Of old a "middle-man" between the Wasukuma boatmen and the caravans who wanted water-carriage to Ukerewe, he has managed to plunder several traders, amongst whom Musa Mzuri, the Indian Doyen of the Kazeh merchants, was one of the principal losers. And all praised as highly the courtesy and good faith of Sultan Machunda of Ukerewe. It is certain that Mahayya proved better than his reputation in his dealings with Captain Speke, but how explain the two-days' caprices of an African mind ?

Though Mahayya be an "ayyar," he has all the presence of an

African king. He belongs to the Wahinda or the cadet princes of Unyamwezi, and his size and general appearance distinguish his blood from that of his subjects. He is described as a giant in miniature, with massive and muscular limbs of uncommon girth, a shiny black skin, and an open pleasing countenance strangely contrasting with square and heavy features. His forehead is adorned with the two little antelope-horns worn by sultans and mediciners, and his close short ringlets are bound round with a fillet of cord. His dress is a barsati or blue Indian cloth; his ornaments are two heavy necklaces of the coarse blue bead common on this road, massive bangles of brass and copper adorn his wrists, broad ivory armlets set off the vast proportions of the arms above the elbows, and over the whole of the short-arm are passed circlets of twisted aloe-fibres, each strung with a single large sofi or white tobacco-pipe bead. His wife is from the northern kingdom of Unyoro; she is not without charms, and appears to be endowed with abundant communicativeness.

The Wasukuma, especially the subjects of Mahayya, are even more boisterous and barbarous than the Wamanda: less civility was experienced by the explorer in the north than in the towns south of Msalala. Covetous to a degree, the people hang back at the sight of an outfit, they price their goods exorbitantly, and they obstinately adhere to their demands. They are more rudely dressed than in the southern countries: here the Nubian apron of aloe-fibre, and even the wisp of grass, become the common articles of maiden attire, and the married women wear mere wrappings of goat-skin bound round the waist. They occupy themselves with fishing, but this, like their travelling, is limited by the insufficiency of their appliances. Timber of large growth is wholly wanting on the southern shores of the Nyanza, whereas in Karagwah and Uganda the mountains and plains are overgrown with tall trees, and have enabled the people to build superior craft. The canoes seen on the southern Nyanza are hollowed logs ruder than those of the Tanganyika, and carrying but a single man: oars, and of course sails, are unknown, and the paddle is like a mixture of spade and shovel. Their mode of articulation is unpleasant; every word seems to be articulated so explosively that a stranger would imagine the offended speaker to be spitting at him. The language varies with every tribe; but the numerals all belong to the one great Zangian family. So pertinacious is curiosity in these lands, that the Arabs declare, when they first explored the Nyanza, even the cows flocked and followed to stare at them.

The most remarkable feature of this region is the fresh-water sea which forms its northern boundary. It is known throughout the African tribes as Nyánzá, and the similarity of the sound to "Nyassa," the indigenous name of the little Maravi or

Kilwa Lake, may have caused in part the wild confusion in which speculative geographers have involved the Lake Regions of Central Africa. The Arabs, after their fashion of deriving comprehensive names from local and minor features, call it Ukerewe, in the Kisukuma dialect meaning the "place of Kerewe" (Kelewe), an island. As has been mentioned, they sometimes attempt to join by a river, a creek, or some other theoretical creation, the Nyanza with the Tanganyika, the altitude of the former being 3750 feet above sea-level, or 1900 feet above the latter, and the mountain regions which divide the two having been frequently travelled over by Arab and African caravans. Hence the name Ukerewe has been transferred in the 'Mombas Mission Map' to the northern waters of the Tanganyika. The Nyanza, as regards name, position, and even existence, has hitherto been unknown to European geographers;* but, as will presently appear, descriptions of this sea by native travellers have been unconsciously transferred by our writers to the Tanganyika of Ujiji, and even to the Nyassa of Kilwa.†

At the southern point, where the Muingwira Nullah falls into the tortuous creek whose surface is a little archipelago of brown rocky tree-clad islets, emerging from the blue waters, the observed latitude of the Nyanza Lake is $2^{\circ} 24'$ s.; the longitude by dead reckoning from Kazeh is E. long. 33° and nearly due north, and the altitude by B. P. thermometer 3750 feet above sea-level. Its extent to the north is unknown to the people of the southern regions, which rather denotes some difficulty in travelling‡ than any great extent. They informed Captain Speke that from Mwanza to the southern frontier of Karagwah

* M. Brun-Rollet ('Le Nil Blanc et le Soudan,' p. 209) heard that on the west of the Padongo—a tribe whom he places to the s. of Mount Kambirat, or below 1° s. lat.—there is a great lake, from whose northern extremity issues a river whose course is unknown. In the map appended to his volume this water is placed between 1° s. and 3° n. lat., and about $25^{\circ} 50'$ E. long. (Greenwich).

† Bowdich ('Discoveries of the Portuguese,' pp. 131, 132), when speaking of the Maravi Lake (the Nyassa), mentions that the "negroes or the Moors of Melinde" have mentioned a great water which is known to reach Mombasa, which the Jesuit missionaries conjectured to communicate with Abyssinia, and of which Father Luis Marianna, who formerly resided at Tete, recommended a discovery, in a letter addressed to the government at Goa, which is still preserved among the public archives of that city." Here the confusion of the Nyanza with the Nyassa is apparent.

‡ Thus the north of the Nyassa or Kilwa Lake, which has been visited by hundreds of caravans, is unknown to the tribes dwelling to the south, and has not yet been fixed by European geographers. Messrs. Gamitto and Monteiro have heard that the Nhanja Muçuro Grande, or Great Water, is nine leagues (30 geographical miles) broad, and this, which represents the Tanganyika, they distinguish from the Nhanja Pequeno, or Little Nhanja, namely the Nyassa. As regards the word Muçuro, which appears in various forms, as Rucuru, Risuro, and Morisuro, Mr. Cooley remarks that it is a Kihiao word, meaning waters or rivers. In the dialect of the great Wahiao tribe Mesi is water, and Rusuro or Lasuro flowing water—a river. Bowdich (quoted by Mr. Cooley, 'Geography of N'yassi,' p. 201) has corrupted the word to "Rokooro."

is a land journey of one month or a sea voyage of five days towards the N.N.W. and then to the north. They also pointed out the direction of Unyoro n. 20° w. The Arab merchants of Kazeh have seen the Nyanza opposite Weranhanja, the capital district of Armanika, King of Karagwah, and declare that it receives the Kitangure River, whose mouth may be placed about the Equator. Beyond that point all is doubtful. The merchants have heard that Suna, the late despot of Uganda, built "matumbi," or undocked vessels, capable of containing forty or fifty men, in order to attack his enemies the Wasoga upon the creeks which indent the western shores of the Nyanza. This, if true, would protract the lake to between 1° and $1^{\circ} 30'$ of n. lat., and give it a total length of about 4° or 240 miles. This point, however, is still involved in the deepest obscurity. Its breadth was estimated as follows. A hill about 200 feet above the water-level shows a conspicuous landmark on the eastern shore, which was set down as forty miles distant. On the south-western angle of the line, from the same point, ground appeared; it was not, however, perceptible on the north-west. The total breadth, therefore, has been assumed at eighty miles, a figure which approaches the traditions chronicled by European geographers.* In the vicinity of Usoga the lake, according to the Arabs, broadens out: of this, however, and in fact of all the formation north of the Equator, it is at present impossible to arrive at certainty.

The Nyanza is an elevated basin or reservoir, the recipient of the surplus monsoon rain which falls in the extensive regions of the Wamasai and their kinsmen to the east, in the Karagwah section of the Lunar Mountains to the west, and southwards in Usukuma or Northern Unyamwezi. Extending to the Equator in the central

* "The Galla nation gave it (the Nyanza, not the Tanganyika, as is supposed by the author) more accurately as being in the southern and south-western parts of their ancient extensive dominions, and held that it was so broad that it took a vulture three hours to fly across it. Well, allowing a little for their amplification, and that the three hours were only two hours and a half, and that the vulture sped at the rate of 60 miles per hour, that would give 150 miles for its breadth, which after all is no bad delineation for a Galla geographer." (Mr. Macqueen's "Geography of Central Africa," p. 117.) As regards Mr. Macqueen's computation, he has given to a vulture the speed of a wild duck or a carrier-pigeon. The 150 miles should be reduced to about one-third or one-half.

The Arabs have a report that the Gallas still inhabit the Islands on the N. E. of the Nyanza. In the map appended to the "Egyptian Explorations of the White Nile" (1840, '41, '42, which arrived at n. lat. $4^{\circ} 42'$ and s. long. $31^{\circ} 2'$ of Greenwich) the Gallas are made to extend to 6° s. lat. M. Brun-Rollet ("Le Nil Blanc et le Soudan," p. 207) considers the Makedo tribes, whom he places between 2° and 3° n. lat. on the right bank of the White Nile, to be of Galla origin. Some of our popular writers have formed grand ideas of the dimensions of Gallaland. According to Mr. Prichard ("Nat. Hist. of Man"), "it is probable that the Kafirs and the Gallas divide between them nearly all the vast extent of the great Central African plateau." No traveller, however, has yet ventured to bring the Gallas down to the Tanganyika Lake.

breadth of the African peninsula, and elevated above the limits of the depression in the heart of the continent, it appears to be a gap in the irregular chain which, running from Usumbara and Kilima-Ngao to Karagwah, represents the formation anciently termed the Mountains of the Moon. The physical features, as far as they were observed, suggest this view. The shores are low and flat, dotted here and there with little hills; the smaller islands also are hill-tops, and any part of the country immediately on the south would, if inundated to the same extent, present a similar aspect. The lake lies open and elevated, rather resembling the drainage and the temporary deposit of extensive floods than a volcanic creation like the Tanganyika, a long narrow mountain-girt basin. The waters are said to be deep, and the extent of the inundation about the southern creek proves that they receive during the season an important accession. The colour was observed to be clear and blue, especially from afar in the early morning; after 9 A.M., when the prevalent south-east wind arose, the surface appeared greyish, or of a dull milky white, probably the effect of atmospheric reflection. The tint, however, does not, according to travellers, ever become red or green like the waters of the Nile. But the produce of the lake resembles that of the river in its purity; the people living on the shores prefer it, unlike the Tanganyika, to the highest and clearest springs; all visitors agree in commending its lightness and sweetness, and declare that the taste is rather of river or of rain-water than resembling the soft slimy produce of stagnant muddy bottoms, or the rough harsh flavour of melted ice and snow.

From the southern creek of the Nyanza, and beyond the archipelago of neighbouring islets, appear the two features which have given to this lake the name of Ukerewe. The Arabs call them "Jezirah"—an ambiguous term, meaning equally insula and peninsula*—but they can scarcely be called islands. The high and rocky Mazita to the east, and the comparatively flat Ukerewe on the west, are described by the Arabs as points terminating seawards in bluffs, and connected with the eastern shore by a low neck of land, probably a continuous reef, flooded during the rains, but never so deeply as to prevent cattle fording the isthmus. The northern and western extremities front deep water, and a broad channel separates it from the southern shore, Usukuma. The Arabs, when visiting Ukerewe or its neighbour, prefer hiring the canoes of the Wasukuma, and paddling round the south-eastern extremity of the Nyanza, to exposing their property and lives by marching through the dangerous tribes of the coast.

Mazita belongs to a people called Makwiya. Ukerewe is inha-

* In the Arabic, as well as in the African languages, it is always necessary to ask if the island is surrounded by water.

bited, according to some informants, by Wasukuma ; according to others, the Wakerewe are marked by their language as ancient emigrants from the highlands of Karagwah. In Ukerewe, which is exceedingly populous, are two brother Sultans :* the chief is "Machunda;" the second, "Ibanda," rules at Wiru, the headland on the western limit. The people collect ivory from the races on the eastern mainland, and store it, awaiting an Arab caravan. Beads are most in request ; as in Usukuma generally, not half a dozen cloths of native and foreign manufacture will be found upon a hundred men. The women are especially badly clad ; even the adult maidens wear only the languti or T-bandage of India, or the Nubian apron of aloe-fibre, strung with the pipe-stem bead called sofi, and blackened, like India-rubber, by use ; it is fastened round the waist, and it depends about 1 foot by 6 or 7 inches in breadth.

The Arabs who traffic in these regions generally establish themselves with Sultan Machunda, and send their slaves in canoes round the south-eastern angle of the lake to trade with the coast people. These races are successively from the south : the Washaki, at a distance of three marches, and their inland neighbours the Wataturu ; then the Warudi,† a wild tribe, rich in ivory, lying about a fortnight's distance ; and beyond them the Wahumba, or Wamasai. Commercial transactions extend along the eastern shore as far as Thiri, or Ut'hiri,‡ a district between Urudi and Uhumba. The savagery of the land has caused accidents amongst travelling traders.§ In 1858 the slaves of Salim bin Rashid, the principal authority for these statements, were relieved of several bales of cloth, during their sleep, when bivouacking upon an inhabited island near the eastern shore.

* Some merchants mention a third chief, whose name however was not known.

† According to the merchants, about two years ago a large mixed caravan of Coast Arabs and Wasawahili were attacked by the Warudi, who did not however prevail against them.

‡ This is possibly the origin of the island of Tiri or Kittiri, placed by Capt. Speke near the n.w. extremity of the Nyanza Lake, off the coast of Uganda, where there is a province called Kittara, peculiarly rich in coffee. The explorer heard from the untrustworthy countrypeople that, after a long coasting voyage, they arrived at an island where the inhabitants, a poor and naked race, live on fish and cultivate coffee for sale. The information appears suspicious. The Arabs know of no islands upon the Nyanza which produce coffee. Moreover, if the people had any traffic, they would not be without clothing.

§ About five years ago a large caravan from Tangs, on the eastern coast, consisting of 400 or 500 guns, and led by Arab merchants, after a journey which had lasted nearly two years, happened to quarrel with the Wahumba or Wamasai near the lake. The subject was the burning down of some grass required for pasture by the wild men. Words led to blows ; the caravan, having but two or three pounds of gunpowder, was soon dispersed ; seven or eight merchants lost their lives, and a few made their escape to Unyanyembe. In 1858 the slaves of Salim bin Rashid, having rescued one of the wounded survivors, who had been allowed by the Wamasai to wander into Urundi, brought him back to Kazeh. He described the country as no longer practicable.

The altitude, the conformation of the Nyanza Lake, the argillaceous colour and the sweetness of its waters, combine to suggest that it may be one of the feeders of the White Nile. In the map appended to M. Brun-Rollet's volume, before alluded to, the large water west of the Padongo tribe, which possibly represents the Nyanza or Ukerewe, is made to drain northwards into the Fitri Lake, and eventually to swell the main stream of the White River. The details supplied by the Egyptian Expedition, which, about twenty years ago, ascended the White River to $3^{\circ} 22'$ N. lat., and about $31^{\circ} 30'$ E. long., and gave the general bearing of the river from that point to its source as south-east, with a distance of one month's journey, or from 300 to 350 miles, would place the actual sources 2° s. lat., and 35° E. long., or in 2° eastward of the southern creek of the Nyanza Lake. This position would occupy the northern counterslope of the Lunar Mountains, the upper watershed of the high region whose culminating apices are Kilima-Ngao, Kenia, and Doengo Engai. The distance of these peaks from the coast, as given by Dr. Krapf, must be considerably reduced, and little authority can be attached to his river Tumbiri.* The site, supposed by Mr. Macqueen † to be at least 21,000 feet above the level of the sea, and consequently 3000 or 4000 feet above the line of perpetual congelation, would admirably explain the two most ancient theories concerning the source of the White River, namely, that it arises in a snowy region, and that its inundation is the result of tropical rains.‡

It is impossible, however, not to suspect that between the upper portion of the Nyanza and the watershed of the White Nile there exists a longitudinal range of elevated ground, running from east to west—a “furca,” draining northwards into the Nile and southwards into the Nyanza Lake—like that which separates the Tanganyika from the Maravi or Nyassa of Kilwa. According to Don Angelo Vinco, who visited Loquek in 1852, beyond the cataract of Garbo—supposed to be in N. lat. $2^{\circ} 40'$ —at a distance of 60 miles lie Robego, the capital of Kuenda, and Lokoya (Logoja), where

* The large river Tumbiri, mentioned by Dr. Krapf as flowing towards Egypt from the northern counterslope of Mount Kenia, rests upon the sole authority of a single wandering native. As, moreover, the word T'humbari or Thumbari means a monkey, and the people are peculiarly fond of satire in a small way, it is not improbable that the very name had no foundation of fact. This is mentioned, as some geographers—for instance, Mr. Macqueen ('Observations on the Geography of Central Africa'; 'Proceedings of the R. G. S. of London,' May 9, 1859)—have been struck by the circumstance that the Austrian Missionaries and M. Werne ('Expedition to discover the Sources of the White Nile, in 1840-41') gave Tubirib as the Bari name of the White Nile at the southern limit of their exploration.

† 'Proceedings of the Geographical Society of London,' Jan. 24 of 1859. Mount Kenia, however, is placed by Mr. Macqueen near the Equator.

‡ Mr. Cooley has proved to the satisfaction of the learned that the true Nile of Ptolemy was the Blue Nile, which descends from the mountains of Abyssinia.

there is an affluent from the east. Beyond Lokoya the White Nile is described as a small and rocky mountain river, presenting none of the features of a stream flowing from a broad expanse of water like the great Nyanza reservoir.*

The periodical swelling of the Nyanza Lake, which, flooding a considerable tract of land on the south, may be supposed—as it is flush with the basal surface of the country—to inundate extensively all the low lands that form its periphery, forbids belief in the possibility of its being the head-stream of the Nile, or the source of its periodical inundation. In Karagwah, upon the western shore, the masika or monsoon lasts from October to May or June, after which the dry season sets in. The Egyptian Expedition found the river falling fast at the end of January, and they learned from the people that it would again rise about the end of March, at which season the sun is vertical over the Equator. About the summer solstice (June), when the rains cease in the regions south of and upon the Equator, the White Nile begins to flood. From March to the autumnal equinox (September) it continues to overflow its banks till it attains its magnitude, and from that time it shrinks through the winter solstice (December) till March. The Nile is, therefore, full during the dry season and low during the rainy season south of and immediately upon the Equator. And as the northern counterslope of Kenia will, to a certain extent, be a lee-land, like Ugogo, it cannot have the superfluity of moisture necessary to send forth a first-class stream. The inundation of the Nile is synchronous with the great falls of the northern equatorial regions, which extend from July to September,† and is dependent solely upon the tropical rains. It is highly probable that the "Coy Sources" of the true Nile will be found to be a network of runnels and rivulets of scanty dimensions, filled by monsoon torrents, and perhaps a little swollen by melted snow on the northern water-parting of the Lunar Mountains.

Of the tribes dwelling in and about Usukuma, the Wamanda and Wahumba have been already described. The Washaki and the Warudi are plundering races, concerning whom little is known. Remain the Wahinda, a clan or class alluded to in this and the former chapter, and the Wataturu, an extensive and once powerful tribe, mentioned when treating of the regions about Tura.

The Wahinda (in the singular Muhinda) are, according to some Arabs, a foreign and ruling family, who came from a distant

* "The mountain chains of Logoja and Kugelu stretch from east and west to south, probably as branches of a mighty mountain-stock under the Equator, from which the streams of the Bahr el Abiad arise." M. Werne (Appendix, p. 340) thus chronicles his belief.

† According to Mr. Petherick, the rains in the region of Nyam-Nyam, north of, but near, the Equator, begin in February, and last till October.

country, probably in the neighbourhood of Somaliland, conquered the south, and became Sultans. This opinion seems to rest upon physical peculiarities,—the superiority of the Wahinda in figure, stature, and complexion to their subjects suggesting a difference of origin. Others explain the word Muhinda to mean a cadet of royal family, and call the class Bayt el Saltanah, or the Kingly House. Thus, whilst Armanika is the Mkámá* or Sovereign of Karagwah, his brother simply takes the title of Muhinda. These conflicting statements may be reconciled by the belief general in the country that the families of the Sultans are a foreign and a nobler race, the date of whose immigration has long fallen into oblivion. This may be credited without difficulty; the physique of the rulers—approximating more to the northern races of Africa—is markedly less negroid than that of their subjects, and the difference is too great to be explained by the effects of superior diet, comfort, and luxury.

The Wahinda are found in the regions of Usui, Karagwah, Uhha, Uvinza, Uyungu, Ujiji, and Urundi, where they live in boma—stockades—and scattered villages. Of this race are the Sultans Suwarora of the Wasui, Armanika of Karagwah, Kanoni of Uhha, Kanze of Uyungu, Mzogera of Uvinza, Rusimba of Ujiji, Mwezi of Urundi, Mnyamurunde of Uyofo, Gaetawa of Uhayya, and Mutawazi of Utumbara. The description of Sultan Mahayya of the Muwanza district will apply to almost all these chiefs. The Wahinda affect a milk diet which is exceedingly fattening, and anoint themselves plentifully with butter and ghee to soften and polish the skin. They never sell their fellow clansmen, are hospitable and civil to strangers, seldom carry arms, fear nothing from the people, and may not be slain even in battle. Where the Wahinda reign, their ministers are the Watosi, a race which will be described when treating of their head-quarters, Karagwah.

The Wataturu extend from the Mángewá district, two marches northward of Tura in a north-north-westerly diagonal, to Usmáo, a district of Usukuma, at the south-eastern angle of the Nyanza Lake. On the north and east they are limited by the Wahumba, on the south by the people of Iramba, and there is said to be a connection between these three tribes. This wild pastoral race was formerly rich in flocks and herds; the Wataturu still have the best asses in the country. About five years ago, however, they were persuaded by Msimbira, a chief of Usukuma, to aid him against his rival Mpagamo, who had called in the Arabs to his assistance. During the long and bitter contest which ensued, the Arabs, as has been related, were worsted in the field, and the Wataturu suffered

* In the southern regions of Usukuma the Sultan is called Mteme; in the countries north of Utumbara, Mkama or Mkamáo, and his sons Wánangwá (in the singular Muángwá).

severe losses in cattle. Shortly before the arrival of the Expedition at Kazeh the foreign merchants had despatched to Utaturu a plundering party of 60 slave musketeers, who, however, suddenly attacked by the people, were obliged to fly, leaving behind 18 of their number. This event was followed by a truce, and the Utaturu resumed their commerce with Tura and Unyanyembe, when, in 1858, a caravan, numbering about 300 men, came in. Two small parties of this people were subsequently met at Tura; they were small, dark, and ugly savages, almost beardless, and not unlike the "Thakur" people in Maharatta-land. Their asses, provided with neat saddle-bags of zebra-skin, were better dressed than the men, who wore no clothing except the simplest hide-sandals. According to the Arabs, this tribe affects nudity: even adult maidens dispense with the usual skin kilt. All those seen were circumcised; they ignored bows and arrows, but they were efficiently armed with long spears, double-edged simes, and heavy hide-shields. They brought calabash or monkey-bread flour—in this country, as in Ugogo, a favourite article of food—and a little salt, collected from the dried mud of a mbuga or swamp in the land of Iramba, to be bartered for holcus and beads. Their language, to the unpractised ear, sounded peculiarly barbarous, and the suspiciousness of the savages rendered it impossible to collect any specimens.

CHAPTER X.

THE NORTHERN KINGDOMS: KARAGWAH, UGANDA, AND UNYORO.

THE extensive and hitherto unknown countries * described in this chapter, being compact despotisms, resembling those of Ashanti and Dahomey rather than the semi-monarchies of Unyamwezi and

* The best approach in modern times to the names of these despotisms has been made by Dr. Livingstone (chap. xxiv.), who, hearing of Karagwah, confounded it with Gurague in Abyssinia. By some strange fatality they have escaped the notice of the acutest speculative geographers; and whilst the wretched tribes of Uhha and Ujiji have appeared in maps and itineraries, these interesting races have been either ignored, or committed to the depths of the "Great Central Lake." Mr. Cooley, however ('Inner Africa Laid Open, p. 6-23), informs us that geographers of the sixteenth and seventeenth centuries place Unyamwezi, from Embroeoe, opposite the Querimbe Islands, on the frontiers of the Mauruca (Makua), to Gurague in Abyssinia, at that time carried far south in the maps. It is, therefore, possible that the confusion between Karagwah and Gurague arose in early days. It is not a little extraordinary that these countries, which are known to almost every travelled Arab at Zanzibar, should have been wholly omitted in the 'Mombas Mission Map.' Long before the E. African Expedition had set out from the coast, the name of Karagwah was familiar to the author.

Urundi, or the barbarous republics of Uvinza and Ujiji, are designated the "Northern Kingdoms." It is regrettable that oral information, and not the results of actual investigation, are offered to the reader concerning regions so interesting as the Northern Kingdoms, the Southern Tanganyika, and the provinces south of Unyanyembe.* But absolute obstacles having interfered, it was judged better to use the labours of others than to omit all notice of a subject which possesses the importance of novelty, because it lacked the advantages of actual exploration. The following notes, collected from various sources, Arab and African, rest principally upon the authority of Snay bin Amir el Harisi and Musa Mzuri, of Kazeh. The former had performed a commercial journey, of 3 years' duration, to the capital of Uganda: the latter, in 1858, returned from the last of several visits to Armanika, the King of Karagwah.

Informants agree in representing the northern races as superior in civilization and social constitution to the other tribes of Eastern and Central Africa. Like the subjects of the Kazembe, they have built extensive and regular settlements, and they reverence even unto worship a single despot, who rules with a rigour which in Europe would be called barbarity. Having thrown off the rude equality of their neighbours, they recognise ranks in society; there is order amongst men, and some idea of honour in women; they add to commerce credit, without which commerce cannot thrive; and they hospitably entertain strangers and guests. These accounts are confirmed by the specimens of male and female slaves from Karagwah and Uganda seen at Unyanyembe: between them and the southern races there is a marked physical difference. Their heads are of another cast: the regions where the reflective faculties and the moral sentiments, especially benevolence, are placed, rise high; the nose is more of the Caucasian type; the immoderate masticating apparatus which gives to the negro and to the lower negroid his peculiar aspect of animality, is greatly modified, and the expression of the countenance is soft, kindly, and not deficient in intelligence.

From Unyanyembe to Kibuga, the capital of Uganda, are five stages, which are distributed into the four crucial stations of Usui,

* To the English reader who doubts the power of pointing out a direction at the distance of 200 or 300 miles, it will be satisfactory to know that, by the stages and alignements given by the Arabs of Kazeh, Capt. Speke was enabled to lay down the southern end of the Nyanza almost as accurately as by actual and astronomical observations. This faculty in the Arab results from his superior perceptive powers, and his daily habit on the route of considering, for the purpose of prayer, the lay of the land. It is rarely found amongst the other Eastern races who are not nomadic, and it would be vain indeed to expect it, even from a Moslem Msaw-hili, much more from an African.

Karagwah, dependent Unyoro, and Uganda. A few remarks concerning each of these divisions may not be unacceptable, and the list of halting-places, supplied by Snay bin Amir and Musa Mzuri, is subjoined in detail.*

Between Unyanyembe and Usui are 16 long, or 19 short, stages. Though the road is for the most part rough and hilly, the marches can scarcely be reduced below 10 statute, or 6 rectilinear geo., miles per diem; in fact, the geographer's danger when making these estimates is, that of falling, through fear of exaggeration, into the opposite and equally incorrect extreme. The general direction of the line leading from Kazeh, in Unyanyembe, to Karagwah, pointed out by Snay bin Amir, bore 345° (corrected 332°); the length of the 19 marches would be about 115 geo. miles. The southern frontier of Usui may, therefore, be safely placed in s. lat. $3^\circ 10'$.

The route from Kazeh to Usui falls at once westward of the line leading to the Nyanza Lake; it diverges, however, but little at first, as they both traverse the small districts of Ulikampuri, Unyambewa, and Ukuni. Usonga, crossed in 5 short marches, is the first considerable district north of Unyanyembe. Thence the road enters the province of Utumbara, which is flanked on the east by Usambiro, and on the west by Uyungu, governed by the Muhinda Sultan, Kanze. Utumbara, as has been mentioned, was lately plundered, and Ruhembe, its chief, was slain, by the predatory Watuta. In Utumbara and Usambiro the people are chiefly the Wafyoma, a tribe of Wanyamwezi: they are a commercial race who traffic, like the Wajiji, in hoes and ivory; and their present Sultan, Mutawazi, has often been visited by the Arabs. Uyofu,† governed by Mnyamurunda, is the northern boundary of Unyamwezi, after which the route enters the ill-famed territory of Usui.

* From Unyanyembe to Usui are reckoned nineteen khambi, or marches, viz.:—

- | | |
|--|---|
| 1. To Ulikampuri (Chap. IX.). | 10. To Urungwa. |
| 2. " Wája. | 11. " Funza of the Sultan Kisesa. |
| 3. " Unyambewa. | 12. " Udruruma. |
| 4. " Ukumbi, including Isenda. | 13, 14. To Usonga of the Sultan Nyángárá. |
| 5. " Wera. | 15. To Usonga of the Sultan Kinoni. |
| 6. " Mumba. | 16. " the large district of Utumbara. |
| 7. " Pare. | 17. " Urangwá. |
| 8. " Ukuni. | 18, 19. To Uyofu. This is the southern |
| 9. " The village Ukwimba, in the dis-
trict of Ukuni. | frontier of Usui. |

By rapid marching Utumbara may be reached in twelve days, and the frontier of Usui in three more, which would reduce the number of stations to fifteen or sixteen long marches.

† Some travellers mention two provinces under the name of Uyofu, the southern governed by Sultan Murunda, and the northern, separated by one march, under Sultan Mnyamurunda.

Usui * is traversed in 7 marches, making a total of 26 from Kazeh. According to the former computation, a total march of about 156 geo. miles would place the southern frontier of Karagwah in s. lat. $2^{\circ} 40'$. Usui is described as a kind of neutral ground between the rolling plateau of Unyamwezi and the highlands of Karagwah : it is broken by ridges in two places—Nyakasene the fourth, and Ruhembe the seventh stage, where mention is also made of a small stream. From this part of the country a wild-nutmeg is brought to Kazeh by caravans : the Arabs declare that it grows upon the well-wooded hills, and the only specimen shown was heavy and well flavoured, presenting a marked contrast to the poor produce of Zanzibar island.

The Wasúi, according to the Arabs, are not Wanyamwezi. They are considered dangerous, and they have frequently cut off the route to caravans from Karagwah. Their principal sultan, a Muhinda named Suwarora, demands exorbitant blackmail, and is described as troublesome and overbearing : his bad example has been imitated by the minor chiefs.

The kingdom of Karagwah,† which is limited on the north by

* From the southern extremity of Usui to the southern frontier of Karagwah, the khambi are :

1	(or 20 from Kazeh)	to Nyetimba.
2	{ 21	" } " Rwa-dega.
3	{ 22	" } " Rwa-gati.
4	{ 23	" } " the hills of Nyakasene.
5	{ 24	" } " a Sultan at T'hungu.
6	{ 25	" } " Kitare of Sultan Suwarora.
7	{ 26	" } " Ruhembe, on the southern frontier of Karagwah.

The distance through Usui is reducible to five rapid marches. The Arabs, however, generally reckon one month and a week (halts included) to reach Karagwah, and from two to two and a half months going and returning.

† From the southern to the northern frontier of Karagwah, the khambi are :

1	(or 27 from Kazeh)	to Urigi.
2	{ 28	" } Khonze.
3	{ 29	" } Kiyira.
4	{ 30	" } Tenga.
5	{ 31	" } Rozoka.
6	{ 32	" } Kafuro.
7	{ 33	" } Weranhanja.
8	{ 34	" } Nyakahanga.
9	{ 35	" } Roziwe.
10	{ 36	" } Magugi.
11	{ 37	" } Katanda.
12	{ 38	" } Kitangure River.

That this estimate is not exaggerated appears by a comparison with that of the Nyanza Lake, whose southern limit was laid down astronomically by Capt. Speke. From Kazeh to Nyanza the Arabs reckon sixteen long marches ; the distance is 180 statute miles, with $40'$ of easting. The Kitangure River, on the northern frontier of Karagwah, they place at forty short, or twenty-seven long marches (namely twelve to Usui, five to Karagwah, and ten to the Kitangure) ; some, however, make it about double the distance of the Nyanza Lake.

the Kitangure or Kitangule River, a great western influent of the Nyanza Lake, occupies 12 days in traversing. The usual estimate would thus give it a depth of 72, and place the northern limit about 228 rectilinear geo. miles from Kazeh, or in s. lat. $1^{\circ} 40'$. But the Kitangure River, according to the Arabs, falls into the Nyanza diagonally from south-west to north-east. Its embouchure will, therefore, be not distant from the Equator. The line of road is thus described. After ascending the hills of Ruhembe the route, deflecting eastward, pursues for 3 days the lacustrine plain of the Nyanza. At Tenga, the fourth station, the first gradient of the Karagwah mountains is crossed, probably at low levels, where the spurs fall towards the lake. Kafuro is a large district where merchants halt to trade, in the vicinity of Weranhánjá, the royal settlement, which commands a distant view of the Nyanza. Nyakahanga, the eighth stage, is a gradient similar to that of Tenga; and Magugi, the tenth station, conducts the traveller to the northernmost ridge of Karagwah. The mountains are described as abrupt and difficult, but not impracticable for laden asses: they are compared by the Arabs to the Rubeho chain of Usagara. This would raise them about 4000 feet above the mean level of the Unyamwezi plateau and the Nyanza water, or about 8000 feet above this sea. Their surface, according to the Arabs, is alternately earth and stone, the former covered with plantains and huge timber-trees, the latter bare, probably by reason of their altitude. There are no plains, bush, or jungle, but the deep ravines and the valleys intersecting the various ridges, and draining the surface of the hills, are the sites of luxuriant cultivation. The people of Karagwah, averse to the labour of felling the forest, burn "bois de vache," like the natives of Usukuma. North of Magugi, at Katanda, a broad flat extends eastwards: the path thence descends the northern counterslope, and falls into the alluvial plain of the Kitungure River.

Karagwah is thus a mass of highlands, bounded on the north by dependent Unyoro, on the south by Usui, eastward by the tribes of Wahayya and Wapororo, upon the lacustrine plain of the Nyanza; whilst, on the south-west it inoculates with Urundi, which has been described as extending from the north-eastern extremity of the Tanganyika Lake. Its equatorial position and its altitude enable it to represent the Central African prolongation of the Lunar Mountains. Ptolemy represents this range, which he supposes to send forth the White Nile, as stretching across the continent for a distance of 10° of longitude. For many years this traditional feature has somewhat fallen into discredit: some geographers have changed the direction as well as the dimensions of the line. Like the Himalayas, it has become the base of the South African triangle; others have turned it from east and

west to north and south, thus converting it into a formation akin to the ghauts or lateral ranges of the Indian peninsula; whilst others have not hesitated to cast ridicule upon the mythus. From the explorations of the "Mombas Mission" in Usumbara, Chhaga, and Kitui, and from the accounts of Arab visitors to the lands of Umasai and the kingdom of Karagwah, it appears that from the 5th parallel of s. lat. to the equatorial regions an elevated mass of granite and sandstone formation* crosses from the shores of the Indian Ocean to the centre of Tropical Africa. The line is not, however, as might be expected from analogy with the Himalayas, a continuous, unbroken chain; it consists of insulated mountains, apparently volcanic, rising from elevated plains, and sometimes connected by barren and broken ridges. The south-eastern threshold of the Lunar Cordillera is the highland region of Usumbara, which may attain the height of 3000 or 4000 feet above sea-level. It leads by a succession of mountain and valley to Chhaga, whose apex is the "Æthiopian Olympus," Kilima-Ngao. From this corner-pillar the line trends westward, and the route to Burkene passes along the base of the principal elevations, Doengo Engai and Endia Siriani. Beyond Burkene lies the Nyanza Lake, in a huge gap which, breaking the continuity of the line, drains the regions westward of Kilima Ngao, whilst those to the eastward, the Pangani and other similar streams, discharge their waters south-eastwards into the Indian Ocean. The kingdom of Karagwah prolongs the line to Urundi, upon the Tanganyika Lake, where the south-western spurs of the Lunar mountains form a high continuous belt. Mr. Petherick, of Khartum, travelling 25 marches, each of 20 miles (?), in a south-south-western and due-southerly direction from the Bahr el Ghazal,† found a granitic ridge rising, he supposes, 2000 to 2500 feet above the plain, near the Equator, and lying nearly upon the same parallel of latitude, and in about 27° E. long. Beyond that point the land is still unexplored. Thence the mountains may sink into the Great Depression of Central Africa, or, deflected northwards of the kingdom of Muropua, they may inoculate with the ridge which, separating the northern negroid races of Islamized Africa from their negro brethren to the south, is popularly known, according to Denham and Clapperton, as El-Gibel Gumhr (Jebel Kamar), or Mons Lunæ.‡

The high woody hills of Karagwah attract a quantity of rain.

* The vast limestone band which extends from the banks of the Burramputra to those of the Tagus appears to be prolonged as far south as the Eastern Horn of Africa, and near the Equator to give place to sandstone formations.

†. The only outlet of the Bahr el Ghazal, where it drains into the White Nile, lies between 8° and 9° of s. lat., and it is known to Europe by the name of Miss-el-ah, from Browne, the traveller in Darfur.

‡ "Narrative of Travels and Discoveries in Northern and Central Africa in the Years 1822, 23, and 24," chap. ii.

The long and copious wet monsoon divides the year into two seasons—a winter of 7 or 8, and a summer of 4 or 5 months. The Vuli, or lesser rain, commences, as at Zanzibar, with the Nayruz (29th of August); it continues with little intermission till the burst of the Masika, which lasts in Karagwah from October to May or June. The winds, as in Unyamwezi, are the Kaskazi, or north and north-east gales, which shift during the heavier falls of rain to the Kosi, the west and south-west. Storms of thunder and lightning are frequent, and the Arabs compare the down-pour rather to that of Zanzibar island than to the scanty showers of Unyamwezi. The sowing season in Karagwah, as at Msene and Ujiji, commences with the Vuli, when maize and millet, the voandzeia, various kinds of beans and pulse, are committed to the well-hoed ground. Rice being unknown, the people depend much upon holcus: this cereal, which is sown in October to prepare for the Masika in November, has, in these mountains, a short cane and a poor, insipid grain, of the red variety. The people convert it into pombe; and they make the wine called mawa from plantains, which in several districts are more abundant than the cereals. Karagwah grows according to some, according to others imports from the northern countries along the western margin of the great Nyanza Lake, a small jungle-coffee, locally called mwámi.* Like all wild productions, it is stunted and undeveloped, and the bean, which when perfect is about the size of a corking-pin's head, is never drunk in decoction. The berry gathered unripe is thrown into hot water—to defend it from rot, or to prevent it drying too rapidly—an operation which converts the husk to a dark chocolate-colour: the people of this country chew it like tobacco, and, during visits, a handful is invariably presented to the guest. According to the Arabs, it has, like the kishr of Yemen, stimulating properties, it affects the head, prevents somnolency, renders water sweet to the taste, and forms a pleasant, refreshing beverage, which the palate, however, never confounds with the taste of the Mocha-berry. In Karagwah a single khete of beads purchases a kubabah (from 1 lb. to 2 lbs.) of this coffee; at Kazeh and Msene, where it is sometimes brought by caravans, it sells at fancy prices. Another well-known production of all these regions is the mt'hipi-t'hipi,† or *Abrus precatorius*, whose scarlet seeds are converted into ornaments for the head.

* This is the general name in this part of Africa; the Wasawahili call the coffee-bean "buni," a corruption of the Arabic "bun," — "kahwah," whence our "coffee," meaning only the decoction. Formerly the shrub was grown along the length of the Zanzibar coast, but the increased facilities for importation have caused it to be neglected.

† The seed is the kirat of the Arabs (which has been corrupted into our "carat"), and the retti weight of the Indian jewellers, goldsmiths, and druggists. The seed varies from one to two grains, and is not considered edible in E. Africa.

The cattle is a fine variety, with small humps and large horns, like that of Ujiji and Uviva. The herds are reckoned by Gundu, or stallions, in the proportion of 1 to 100 cows. The late Sultan Ndagara is said to have owned 200 Gundu, or 20,000 cows, which late civil wars have reduced to 12,000 or 13,000. In Karagwah cattle forms wealth, and everywhere in Africa wealth, and wealth only, secures defenders and dependants. The surplus males are killed for beef; this meat, with milk in its various preparations, and a little of the fine white hill-honey, forms the food of the higher classes.

The people of Karagwah, who are not, according to South African fashion, called Wakaragwah, are divided into two orders—Wahuma and Wanyambo, who seem to bear to each other the relation of patron and client, patrician and plebeian. The Wahuma comprises the rich, who sometimes possess 1000 head of cattle, and the warriors, a militia paid in the milk of cows allotted to their temporary use by the king. The Wanyambo—Fellahs or Ryots—are, it is said, treated by the nobles as slaves. The men of Karagwah are a tall stout race, doubtless from the effect of pure mountain-air and animal food. Corpulence is a beauty: girls are fattened to a vast bulk by drenches of curds and cream thickened with flour, and are duly disciplined when they refuse. The Arabs describe them as frequently growing to a monstrous size, like some specimens of female Boers mentioned by early travellers in Southern Africa. Fresh milk is the male, sour the female beverage. The complexion is a brown-yellow, like that of the Warundi. The dress of the people, and even of the chiefs, is an apron of close-grained mbugu, or bark-cloth, softened with oil, and crimped with fine longitudinal lines made with a batten or pounding club. In shape it resembles the flap of an English hunting saddle, tied by a prolongation of the upper corners round the waist. To this scarcely decent article the chiefs add a "languti," or Indian T-bandage of goat's skin. Nudity is not uncommon, and nubile girls assume the veriest apology for clothing, which is exchanged after marriage for short kilts and breast coverings of skin. Both sexes wear tiara-shaped and cravat-formed ornaments of the crimson abrus-seed, pierced and strung upon mondo, the fine fibre of the mwale, or Raphia palm. The weapons are bows and arrows, spears, knobsticks, and knives; the ornaments beads and brass-wire bracelets, which, with cattle, form the marriage settlement.* The huts are of the conical and circular African shape, with walls of stakes and roofs so carefully thatched that no rain can penetrate

* It varies from two to twenty cows, and from five to fifteen kitindi, each worth about four cloths. According to the Arabs, the husband, having paid a settlement for his wife, has, like some of the lower Pariah castes in India, certain claims upon her mother.

them: the villages, as in Usagara, are scattered upon the crests and ridges of the hills.

The Mkámá, or Sultan of Karagwah, in 1858, was Armanika, son of Ndagara, who, although the dignity is in these lands hereditary, was opposed by his younger brother Rumanika. The rebel, after an obstinate attack, was routed by Suna, the late despot of Uganda, who, bribed by a large present of ivory, which was advanced by Musa Mzuri of Kazeh, then trading with Armanika, threw a large force into the field. Rumanika was blinded and pensioned, and about four years ago peace was restored. Armanika resides in the central district, Weranhanja, and his settlement, inhabited only by the royal family, contains from forty to fifty huts. He is described as a man of 30—35 years, tall, sturdy, and sinewy-limbed, resembling a Somali. His dress is, by preference, the mbugu, or bark-cloth, but he has a large store of fine raiment presented by his Arab visitors: in ornaments he is distinguished by tight gaiters of beads, extending from knee to ankle. His diet is meat and milk, with sometimes a little honey, plantains, and grain: unlike his subjects, he eschews mawa and pombe. He has about a dozen wives, an unusually moderate allowance for an African chief, and they have borne him ten or eleven children. The royal family is said to be a race of centenarians; they are buried in their garments, sitting and holding their weapons: when the king dies there is a funeral feast.

Under the Mkama is a single minister, who takes the title of Muhinda, and presides over the Wakungu, elders and headmen, whose duty it is to collect and to transmit to the monarch once every month his revenues, in the shape of slaves and ivory, cattle and provisions. Milk must be forwarded by proprietors of cows and herds even from a distance of three days' march. Armanika is an absolute ruler, and he governs without squeamishness. Adulterers are punished by heavy fines in cattle, murderers are speared and beheaded, rebels and thieves are blinded by gouging out the eyes with the finger-joints of the right hand, and then severing the muscles. Subjects are forbidden to castrate cattle, as is customary amongst the neighbouring races, and, for fear of bewitching the animals, to sell milk to those who eat beans or salt. The Mkama, who lives without state or splendour, receives travellers with courtesy. Hearing of their approach, he orders his slaves to erect four or five tents for shelter, and he greets them with a large present of provisions. He demands no blackmail, but the offerer is valued according to his offerings: the return gifts are carefully proportioned, and for beads which suit his taste he has sent back an acknowledgment of fifty slaves and forty cows. The price of adult male slaves varies from eight to ten fundo of white, green, or blue porcelain beads: a woman in her prime costs two kitindi

(each equal to one dollar on the coast), and five or six fundo of mixed beads. Some of these girls, being light-coloured and well favoured, sell for sixty dollars at Zanzibar. The merchants agree in declaring that a European would receive in Karagwah the kindest welcome, but that to support the dignity of the white face a considerable sum would be required. Arabs still visit Armanika to purchase slaves, cattle, and ivory, the whitest and softest, the largest and heaviest in this part of Central Africa. The land is rich in iron, and the spears of Karagwah, which are, to some extent, tempered, are preferred to the rude work of the Wafyoma. Sulphur is found, according to the Arabs, near hot springs amongst the mountains. A species of manatus* (?) supplies a fine skin used for clothing. The simbi, or cowrie (*Cypraea*), is the minor currency of the country : it is brought from the coast by return caravans of Wanyamwezi.[†]

The country of Karagwah is at present the head-quarters of the Watosi, a pastoral people who are scattered throughout these Lake regions. They came, according to tradition, from Usingo, a mountain district lying to the north of Uhha. They refuse to carry loads, to cultivate the ground, or to sell one another. Harmless, and therefore unarmed, they are often plundered, though rarely slain, by other tribes, and they protect themselves by paying fees in cattle to the chiefs. When the Wahinda are sultans, the Watosi appear as councillors and elders ; but whether this rank is derived from a foreign and superior origin, or is merely the price of their presents, cannot be determined. In appearance they are a tall, comely, and comparatively fair people. They are said to derive themselves from a single ancestor, and to consider the surrounding tribes as serviles, from whom they will take concubines, but to whom they refuse their daughters. Some lodges of this people were seen about Unyanyembe and Msene, where they live by selling cattle, milk, and butter. Their villages are poor, dirty, and unpalisaded ; mere scatters of ragged round huts. They have some curious practices ; they never eat out of their own houses, and, after returning from

* This is a mere conjecture, as the description given by Musa Mzuri and the Arabs sounds almost fabulous. The ngábi, or nzoge as it is called, is herbivorous and amphibious, therefore unlawful to Moslems ; it is celebrated for nibbling ivory found upon the ground, and sometimes kills by biting those who attack it. Its height is about five and its length six feet ; its face is like that of a calf, and its skin is beautified at the shoulders with hair of a red-yellow colour, about a foot long. It has short teeth and four tusks about the size of a man's finger, five long nails, and a short goat-like tail. The manatus is not uncommon in African rivers, and it is the only animal of the kind which would be equally strange to Arabs and Indians. Unfortunately the only specimen of the skin brought to Kazeh had been made away with by the slaves.

† The cowrie is little used upon the line from Zanzibar to the Tanganyika ; immediately northwards, however, it becomes an object of importation, and thus assimilates the people to the negro races north of the Equator lately visited by Mr. Petherick.

abroad, they test the fidelity of their wives before anointing themselves and entering their houses. The Arabs declare that they are known by their black gums, which they consider a beauty.

The last feature of importance in Karagwah is the Kitangure River on its northern frontier. This stream, deriving its name from a large settlement on its banks, according to some travellers flows through a rocky trough, according to others traverses a plain. Some, again, make it 30 yards, others 600, and even half a mile, in breadth. All these statements are reconcileable. The river issues from Higher Urundi, not far from the Malagarazi; but whilst the latter, engaged in the depression of Central Africa, is drawn towards the Tanganyika, the former, falling into the counterslope, is directed to the north-east into the Nyanza Lake. Its course would thus lie through a mountain-valley, from which it issues into a lacustrine plain, the lowlands of Unyoro and Uganda. The dark and swift stream must be crossed in canoes even during the dry season, but, like the Malagarazi, about June or at the end of the rains, it debords over the swampy lands of its lower course.

From the Kitangure River fifteen stations* conduct the traveller to Kibuga, the capital district of Uganda, and the residence of its powerful despot. The maximum of these marches would be 6 daily, or a total of 90, rectilinear geographical miles. Though there are no hills, the rivers and rivulets—said to be upwards of a hundred in number—offer serious obstacles to rapid travelling. Assuming, then, the point where the Kitangure River is crossed to be in s. lat. $1^{\circ} 40'$, Kibuga may be placed in s. lat. $0^{\circ} 10'$. Beyond Weranhanja no traveller with claims to credibility has seen the Nyanza water. Beyond Kibuga all is uncertain; the Arabs were not permitted by Suna, the last despot, to penetrate farther north.

The two first marches from the Kitangure River traverse the

* From the Kitangure River to Kibuga the khambi given are:—

1 (or 39 from Kazeh)	to Ngandu of Unyoro.
2 { 40	" Kikomo.
3 { 41	" Kiswele in Kittara.
4 { 42	" Vigada.
5 { 43	" Chamu.
6 { 44	" Kiwáre.
7 { 45	" Tukura.
8 { 46	" Gorama.
9 { 47	" Nyendo.
10 { 48	" Kitutu, on the right bank of the Katonga River.
11 { 49	" Mzuru, on the left bank of ditto.
12 { 50	" Ruvunga.
13 { 51	" Kibili.
14 { 52	" Mgongo (a back, a hill?)
15 { 53	" Kibuga.

From Unyanyembe to Kibuga, in Central Uganda, this total of fifty-three marches, with due allowance for westing (between 20° and 30°), can scarcely be reduced below 300 geographical and rectilinear miles, in a due northerly direction.

territory of dependent Unyoro, so called because it has lately become subject to the Sultan of Uganda. In former times Unyoro in crescent shape, with the cusps fronting eastwards and westwards, almost encompassed Uganda. From dependent Unyoro the path, crossing a tract of low jungle, enters Uganda in the concave of the crescent. The tributary Wahayya, under Gaetawa, their sultan, still extend to the eastward. North of the Wahayya, of whose territory little is known, lies "Kittara," in Unyoro (or Uganda?), a word interpreted to mean "mart," or "meeting-place." This is the region which supplies Karagwah with coffee. The shrub is propagated by sowing the bean. It attains the height of 5 feet, branching out about half-way; it gives fruit after the third, and is in full vigour after the fifth year. Before almost every hut-door there is a natural plantation, forming an effective feature in the landscape of rolling and wavy hill, intersected by a network of rivers and streams: the foliage is compared to a green tapestry veiling the ground; and at times, when the leaves are stripped off by wind and rain, the plant appears decked with brilliant crimson and cherry-like berries.* The Katonga River, crossed at Kitutu, is supposed to fall into the Nyanza, the general recipient of the network of streams about Karagwah. This diagonality may result from the compound incline produced by the northern counterslope of the mountains of Karagwah and the south-eastward depression necessary to form and to supply the lake. The Katonga is a sluggish and almost stagnant body of considerable breadth, and when swollen it arrests the progress of caravans. Some portions of the river are crossed, according to the Arabs, over a thick growth of aquatic vegetation, which forms a kind of matwork, capable of supporting a man's weight,† and cattle are towed over in the more open parts by cords attached to their horns. Four stations lead from the Katonga River to Kibuga, the capital district of Uganda.

Kibuga is the residence of the great Mkámá or chief of Uganda. Concerning its population and peculiarities the Arabs must be allowed to tell their own tale. "Kibuga, the settlement, is not less than a day's journey in length; the buildings are of cane and rattan. The sultan's palace is at least a mile long, and the circular huts, neatly ranged in line, are surrounded by a strong fence which has only four gates. Bells at the several entrances announce the approach of strangers, and guards in hundreds attend there at all hours. They are commanded by four chiefs, who are

* In Kittara, according to Ssny bin Amir, the coffee is toasted, pulverized, and eaten dry; this custom is also common amongst the Gallas.

† M. Werne ('Expedition to discover the Sources of the White Nile, in the Years 1840-41') repeatedly mentions a similar phenomenon on that river, a "green sea of watery grass," and islands of large and small dimensions, formed by water-grasses and green reeds, capable of drawing round and arresting the progress of his boat.

relieved every second day : these men pass the night under hides raised upon uprights, and their heads are forfeited if they neglect to attend to the summons of the king. The harem contains about 3000 souls—concubines, slaves, and children. No male nor adult animal may penetrate, under pain of death, beyond the barzah,* a large vestibule or hall of audience where the king dispenses justice and receives his customs. This palace has often been burned down by lightning : on these occasions the warriors must assemble and extinguish the fire by rolling over it. The chief of Uganda has but two wants with which he troubles his visitors—one, a medicine against death ; the other, a charm to avert the thunderbolt : and immense wealth would reward the man who could supply either of these desiderata."

Suna, the great despot of Uganda, a warlike chief, who wrested dependent Unyoro from its former possessor,† reigned till 1857. He perished in the prime of life and suddenly, as the Arabs say, like Namrud. Whilst riding "pickaback"—the state carriage of Central Africa—upon a minister's shoulders,‡ he was struck by the shaft of the destroyer in the midst of his mighty host. As is the custom of barbarous and despotic races, the event was concealed for some months. When the usual time had expired, one of his many sons, exchanging his heir-elective name Sámunjú for Mtesa, became king. The court usage compels the newly elected monarch to pass two years in retirement, committing state affairs to his ministers ; little therefore is yet known of him. As he will certainly tread in the footsteps of his sire, the Arabs may again be allowed to describe the state and grandeur of the defunct Suna ; and as Suna was in fact Uganda, the description will elucidate the condition of the people in general.

Suna was a soldier. The army of Uganda numbered at least 300,000 men ; each man brought an egg to muster, and thus something like a reckoning of the people was made. The warriors had one spear, two assegais, a long dagger, and a shield—bows and swords being unknown. When marching the host was accompanied by women and children carrying spare weapons, provisions, and water. In battle they fought to the sound of drums, which were beaten with

* This word is explained in Chap. VI.

† According to others, Unyoro was subjugated by Suna's father ; others again claim the honour for his grandfather.

‡ This is a truly African mountre ; Dr. Livingstone (chap. xxii.) describes its being the fashion amongst the chiefs of Londa, and it formerly was as common in the unequstrian countries of Eastern, as of the Central and the Western regions. The Arabs have preserved a tradition that, when their ancestors first occupied the island of Zanzibar, the son of the principal Wasawahili Sultan, having a quarrel with one of the strangers, struck and maltreated him. "Thy hair is not white like thy sire's, boy," said the father, "or thou wouldest mind the day when the Wazungu (the Portuguese) bestrode our shoulders, hammered our sides with heels, and voided rheum upon our breasts."

sticks like those of the Franks : when this performance ceased, all fled from the field. Wars with the Wanyoro, the Wasoga, and other neighbours were rendered almost chronic by the policy as well as the pleasure of the monarch, and there were few days on which a foraging party did not march from or return to the capital. When the king had no foreign enemies, or when the exchequer was indecently deficient, he feigned a rebellion, attacked one of his own provinces, massacred the chief men, and sold off the peasantry. Executions were frequent, a score being often slain at a time : * when remonstrated with concerning this barbarity, Suna declared that he had no other secret for keeping his subjects in awe of him, and for preventing conspiracies. Sometimes the king would accompany his army to a battue of game, when the warriors were expected to distinguish themselves by attacking the most ferocious beasts without weapons : even the elephant, borne down by numbers, yielded to the grasp of man. When passing a village he used to raise a shout, which was responded to by a loud flourish of horns, reed-pipes, iron whistles, and similar instruments. At times he decreed a grand muster of his soldiery : he presented himself sitting before his gate, with a spear in the right hand, and holding in the left the leash of a large and favourite dog resembling an Arab suluki or greyhound. The master of the hounds was an important personage. Suna took great pleasure in witnessing trials of strength, the combatants contending with a mixture of slapping and pushing till one fell to the ground. He had a large menagerie of lions, elephants, leopards, and similar beasts of disport, to whom he would sometimes give a criminal as a "curée :" he also kept for amusement fifteen or sixteen albinos ; and so greedy was he of novelty that even a cock of peculiar form or colour would have been forwarded by its owner to feed his eyes.

Suna when last visited by the Arabs was a "red man,"† aged about forty-five, tall, robust, and powerful of limb, with a right kingly presence and a warrior carriage. His head was so shaven as to leave what the Omani call "el Kishshah," a narrow crest of hair like a cock's comb, from nape to brow, which, nodding and falling over his face under its weight of strung beads, gave him a fierce and formidable aspect. This tonsure, confined to those about the palace, distinguished its officers and inmates, servile as well as free, from the people. The ryots left patches of hair where they pleased, but they might not shave the whole scalp under pain of

* This is not understood as the performance of sanguinary rites, as the Mwata ya Nvo (Matiamvo) or prince of Uropua, the tyrants of Ashanti and Dahomey, and even the little despot of Harar, are compelled to enforce their authority by frequent and barbarous executions. These cruelties are, in fact, the base of African as of Asiatic despotsms.

† This is used by the Arabs to express a light complexion ; they call the English, for instance, not a white, but a red people.

death, till a royal edict unexpectedly issued at times commanded every head to shed its honours. Suna never appeared in public without a spear; his dress was the national costume, a long piece of the fine crimped mbugu or bark-cloth manufactured in those regions, extending from the neck to the ground. He made over to his women the rich clothes presented by the Arabs, and allowed them to sew with unravelled cotton thread, whereas the people under severe penalties were compelled to use plantain fibre. No commoner could wear domestics or similar luxuries; and in the presence, the accidental exposure of a limb led, according to the merchants, to the normal penalty—death.

Suna, like the northern despots generally, had a variety of names, all expressing something bitter, mighty, or terrible, as for instance "Libarc," the Almighty (?); "Mbidde" and "Purgoma," a lion. He could not understand how the Sultan of Zanzibar allowed his subjects treasonably to assume the name of their ruler; and besides mortifying the Arabs by assuming an infinite superiority over their prince, he shocked them by his natural and unaffected impiety. He boasted to them that he was the god of earth, as their Allah was the Lord of Heaven. He murmured loudly against the abuse of lightning; and he claimed from his subjects divine honours, which were as readily yielded to him as by the Romans to their emperors. No Mgándá would allow the omnipotence of his sultan to be questioned, and a light word concerning him would have imperilled a stranger's life. Suna's domestic policy reminds the English reader of the African peculiarities which form the groundwork of 'Rasselas.' His sons, numbering more than one hundred, were removed from the palace in early youth to separate dungeons, and so secured with iron collars and fetters fastened to both ends of a long wooden bar that the wretches could never sit, and without aid could neither rise nor lie. The heir-elective was dragged from his chains to fill a throne, and the cadets will linger through their dreadful lives, unless wanted as sovereigns, until death shall release them. Suna kept his female children under the most rigid surveillance within the palace: he had, however, a favourite daughter named Nasuru, whose society was so necessary to him that he allowed her to appear with him in public.

The principal officers under the despot of Uganda are, first, the Kimara Vyona* (literally the "finisher of all things"); to this, the chief civilian of the land, the city is committed; he also directs the kabaka or village headmen. The second is the Sakibobo or commander-in-chief, who has power over the Sáwágánzi, the lifeguards and slaves, the warriors and builders of the palace. Justice is

* Ku kimárá, in the coast dialect of Kisawahili, means to finish. Vyona is interpreted to signify "yo'the," scil. all things.

administered in the capital by the sultan, who, though severe, is never accused of perverting the law, which here would signify the ancient custom of the country. A Mhozi—Arabized to Hoz, and compared with the Kazi of El Islam—judges in each town criminal and civil causes. The only punishments appear to be death and mutilation. Capital offenders are beheaded or burned; in some cases they are flayed alive; the operation commences with the face, and the skin, which is always much torn by the knife, is stuffed as in the old torturing days of Asia. When a criminal absconds, the males of his village are indiscriminately slain and the women are sold—blood and tears must flow for discipline. In money suits each party begins by placing before the Mhozi a sum equivalent to the disputed claim; the object is to prevent an extensive litigiousness. Suna used to fine by fives or tens, dozens or scores, according to the offender's means; thus from a wealthy man he would take twenty male and twenty female slaves, with a similar number of bulls and cows, goats and kids, hens and even eggs. One of his favourites, who used constantly to sit by him on guard, matchlock in hand, was Isa bin Hosayn, a Baloch mercenary of H. H. Sayyid Said of Zanzibar. He had fled from his debtors, and had gradually wandered to Uganda, where the favour of the sovereign procured him wealth in ivory, and a harem containing from 200 to 300 women. "Mzagayya,"—the hairy one, as he was locally called from his long locks and bushy beard—was not permitted, nor probably did he desire, to quit the country; after his patron's death he fled to independent Unyoro, having raised up, as these adventurers will, a host of enemies at Uganda.

Suna greatly encouraged by gifts and attention the Arab merchants to trade in his capital; the distance has hitherto prevented more than half-a-dozen caravans travelling to Kibuga; all however came away loudly praising his courtesy and hospitality. To a poor trader he has presented twenty slaves and an equal number of cows without expecting any but the humblest return. The following narrative of a visit paid to him in 1852 by Snay bin Amir may complete his account of the despot of Uganda. When the report of arrival was forwarded by word of mouth to Suna, he issued orders for the erection of as many huts as might be necessary. The guest, who was received with joyful tumult by a crowd of gazers, was conducted to the newly built quarters, where he found a present of bullocks and grain, plantains and sugarcanes. After three or four days for repose he was summoned to the barzah or audience hall, outside of which he found a squatting body of about 2000 guards armed only with staves. Allowed to retain his weapons, he entered with an interpreter and saluted the chief, who without rising motioned his guest to sit down in front of him. Suna's only cushion was a mbugu; his dress was of the

same stuff; two spears lay close at hand, and his dog was as usual by his side. The Arab thought proper to assume the posture of homage, namely, to sit upon his shins, bending his back, and, with eyes fixed on the ground—he had been cautioned against staring at the “god of earth”—to rest his hands upon his lap. The levée was full; at a distance of fifty paces between the king and the guards sat the ministers; and inside the palace, so placed that they could see nothing but the visitor’s back, were the principal women, who were forbidden to gaze at or to be gazed at by a stranger. The room was lit with torches of a gummy wood, for Suna, who eschewed pombe, took great pleasure in these audiences, which were often prolonged from sunset to midnight.

The conversation began with a string of questions concerning Zanzibar, the route, the news, and the other staple topics of barbarous confabulation; when it flagged, a minister was called up to enliven it. No justice was administered nor present offered during the first audience; it concluded with the rising of the despot, at which signal all dispersed. During the second visit Snay presented his blackmail, which consisted of ten cotton cloths, and 100 fundo of coral and other porcelain beads. The return was an offering of two ivories and a pair of slaves; every day, moreover, flesh and grain, fruit and milk were supplied without charge; whenever the wish was expressed, a string of slave-girls presently appeared bending under loads of the article in question; and it was intimated to the “king’s stranger” that he might lay hands upon whatever he pleased, animate or inanimate. Snay, however, was too wise to avail himself of this truly African privilege. During the four interviews which followed, Suna proved himself a man of intelligence: he inquired about the Wazungu or Europeans, and professed to be anxious for a closer alliance with the Sultan of Zanzibar. When Snay took leave he received the usual present of provisions for the road, and 200 guards prepared to escort him, an honour which he respectfully declined: Suna offered to send with him several loads of elephants’ tusks as presents to H. H. the Sayyid; but the merchant objected to face with them the difficulties and dangers of Usúi. Like all African chiefs, he considered these visits as personal honours paid to himself; his pride therefore peremptorily forbade strangers to pass northwards of his capital, lest the lesser and hostile chiefs might boast a similar brave. According to Snay an European would be received with distinction if travelling with supplies to support his dignity. He would depend, however, upon his ingenuity and good fortune upon further progress; and perhaps the most feasible plan to explore the watershed north of the Nyanza Lake would be to buy or to build, with the permission of the reigning monarch, boats upon the nearest western shore. Suna himself had, according to Snay, constructed a flotilla of matumbi or undecked vessels similar in shape to the

Mtope or Muntafiyah—the modern Ploiaria Rhapta of the Sawa-hili coast from Lamu to Kilwa.*

Few details were given by the Arabs concerning the vulgar herd of Waganda : they are, as has been remarked, physically a finer race than the Wanyamwezi, and they are as superior in character ; more docile and better disciplined, they love small gifts, and show their gratitude by prostrating themselves before the donor. The specimens of slaves seen at Kazeh were, however, inferior to the mountaineers of Karagwah ; the complexion was darker, and the general appearance more African. Their language is, to use an Arab phrase, like that of birds, soft and quickly spoken ; the specimens collected prove without doubt that it belongs to the Zangian branch of the great South African family. Their normal dress is the mbugu, under which, however, all wear the "languti" or Indian T-bandage of goatskin ; women appear in short kilts and breast-coverings of the same material. Both sexes decorate their heads with the tiara of abrus-seeds alluded to when describing the people of Karagwah. As sumptuary laws impede the free traffic of cloth into Uganda, the imports are represented chiefly by beads, cowries, and brass and copper wires. The wealth of the country is in cattle, ivory, and slaves, the latter often selling for ten fundo of beads, and the same sum will purchase the Wasoga and Wanyoro captives from whom the despot derives a considerable portion of his revenues. The elephant is rare in Uganda ; tusks are collected probably by plunder from Usogo, and the alakah of about 90 Arab lbs. is sold for two slaves male or female. The tobacco, brought to market in leaf as in Ujiji, and not worked as amongst the other tribes, is peculiarly good. Flesh, sweet potatoes, and the highly nutritious plantain, which grows in groves a whole day's-march long, are the chief articles of diet ; milk is drunk by women only, and ghee is more valued for unction than for cookery. The favourite inebriants are mawa and pombe ; the latter is served in neatly carved and coloured gourds, and the contents are imbibed through a reed.

From Kibuga the Arabs have heard that between fifteen and twenty marches lead to the Kivira River, a larger and swifter stream than the Katonga, which forms the northern limit of Uganda, and the southern frontier of Unyoro.† They are unable

* In this account of Suna's flotilla the Arabs have probably admitted some exaggeration. They had never heard of anything like Egyptian boats appearing upon the upper waters of the Nyanza ; and, as has been said before, there is no credible eye-witness to the prolongation of the lake north of the Equator.

† Assuming Kibuga to lie close to the Equator, the Kivira River, forming the northern boundary of Uganda, may be placed, with due allowance for deflection in a distance of 90 to 100 miles, about $1^{\circ} 40' \text{ N. lat.}$ All the Arabs and other informants made it flow into, not out of, the Nyanza Lake. Yet the direction has been changed by Capt. Speke, for reasons best known to himself, in the little map published in 'Blackwood's Magazine' (Sept. 1859), and in the 'Original Karte' of M. Petermann (*Mittheilungen*, No. IX., of 1859).

to give the names of stations. South of Kivira is Usoga, a low alluvial land, cut by a multitude of creeks, islets, and lagoons, in whose thick vegetation the people take refuge from the plundering parties of the Waganda, whose chief built, as has been told, large boats to dislodge them. The Wasoga have no single sultan, and their only marketable commodity is ivory.

On the north, the north-west, and the west of Uganda lies, according to the Arabs, the land of Independent Unyoro. The slaves from that country vaguely describe it as being bounded on the north-west by a tribe called Wakede, who have a currency of cowries, and wear tiaras of the shell ; and the Arabs have heard that on the north-east there is a "people with long daggers like the Somal," who may be Gallas (?). But whether the Nyanza Lake extends north of the Equator is a question still to be decided. Those consulted at Kazeh ignored even the name of the Nyamnyam ; nor had they heard of the Bahri, the Barri, the Shilluks on the west, and the Dinkas to the east of the Nile, made familiar to us by the Austrian Mission at Gondokoro, and other explorers.

The Wanyoro are a distinct race, speaking a language of the Zangian family : they have suffered from the vicinity of the more warlike Waganda, who have affixed to the conquered the opprobrious name of widdu or serviles ; and they have lost their southern possessions which formerly extended between Karagwah and Uganda. Their late despot Chawambi, whose death occurred about ten years ago, left three sons, one of whom, it is reported, has fallen into the power of Uganda, whilst the two others still rule independently. The country is rich and fertile, and magnificent tales are told concerning the collections of ivory, which in some parts are planted in the ground to pen cattle. Slaves are cheap ; they find their way to the southern markets *via* Uganda and Karagwah. Those seen at Kazeh and Kirira, where the Arab traders had a large gang, appeared somewhat inferior to the other races of the northern kingdoms, with a dull dead black colour, flattish heads, brows somewhat retreating, prominent eyes, and projecting lower jaws. They were tattooed in large burnt blotches encircling the forehead, and in some cases the inferior excisors had been extracted.* The price of cattle in Unyoro varies from 500 to 1000 cowries. In this country ten simbi (*Cypraea*) represent one khete of beads ; they are the most esteemed currency, and are also used as ornaments for the neck, arms, and legs, and decorations for stools and drums.

* Such, according to M. Werne and Mr. Petherick, is the custom of the Shilluks and other Nilotic tribes.

CHAPTER XI.

THE SOUTHERN PROVINCES : UBENA, U'UNGU, AND K'HOKORO.

UBENA, U'ungu, and K'hokoro are included by the Wanyamwezi in "Utakama," or the southern division of their ancient empire; the word is universally used in distinction to "Usukuma," or the northern provinces between Unyanyembe and the Nyanza Lake. The point of departure is Kazeh, the great central dépôt and ancient station of Unyanyembe, fixed by lunar distances in s. lat. $5^{\circ} 1'$, and e. long. $33^{\circ} 3'$. The directions of the southern routes are laid down by various Arab travellers, and the distances are estimated according to the normal rate of marching. The principal lines trending southerly are three in number:—

I. The south-eastern (s. 20° to 30° E., corrected 10° to 20° E.), passes, after the twenty-first march, from the lands of the Wakimbu to the country of Urori: a total of thirty-two, which may be accomplished by hard and long work in eighteen days, conducts the caravan to Ubena, the limit of this march. The distance would be about 210 to 220 geographical miles, and consequently Ubena may be placed in s. lat. $8^{\circ} 30'$ s. lat. and 35° E. long.

II. The southern line leads by thirty marches, 260 geographical miles, including one-fifth for deflection, to the land of U'ungu, which has therefore been fixed at s. lat. $8^{\circ} 30'$, and e. long. 34° .

III. The south-western line numbers fourteen marches, or 85 rectilinear geographical miles, including deflection, to K'hokoro, whose eastern limit is made adjacent to Kiwere. This point may be placed in s. lat. $6^{\circ} 25'$, and e. long. 33° .

The several routes will be described in due order, beginning with that to Ubena, which has been repeatedly traversed in earlier times by Snay bin Amir and other Arab merchants. The names of the stations are given below; various notices concerning the adjoining regions, as well as those traversed, will here be briefly recorded.*

- * 1. From Kazeh to the Simbu (meaning, in Kinyamwezi, a place where water must be dug for).
- 2. To a nullah, or stream; here there is a mtongi, or minor chief, named Mbogo.
- 3. To a mtoni, or fiumara, called Mongo (?).
- 4. To the Simbu of Unyamwanga, belonging to a subtribe of the Wanyamwezi, called Wanyamwanga.
- 5 and 6. To the lesser and the greater "Mwámi."
- 7. To a ziwa, or pond, dry during drought. Here the Wakimbu are mixed with the Wanyamwezi.
- 8 and 9. To Nguru, the district of Sultan Kibuya of Ukimbu.
- 10. To a mtoni of flowing water.
- 11. To Unysangwira.
- 12 and 13. To a mtoni.
- 14. To

From Kazeh four long or eight short marches, across a country for the most part deserted, conduct the traveller to Nguru. It must not be confounded with the mountain region of the same name situated seven or eight marches inland from the port of Saadani, as has been done by the authors of the 'Mombas Mission Map,' in deriving the Rufiji or Rwaha River. At the fifth station, called Mvámi—a rock overlying a spring—the people point out the place where the inhabitants were buried alive by some convulsion of the earth: they make offerings in a cavern, and use the word márwá for water instead of the popular máji, which it is considered ill-omened to articulate. Nguru is a hilly region, fertile and rich in cattle; it belongs to the Wakanongo, apparently a sub-tribe of the Wanyamwezi, who all go by this name amongst the Wasagara and the Wagogo. The Sultan of Nguru in 1858 was Kibuya, son of Pemba-m'oto,* a friend of the Arabs.

Two short marches or one long, making a total of five from Kazeh, lead from Nguru to Unyangwírá, a cultivated and populous province. The Wanyangwira are a small independent tribe, under a Sultan Malewa, who has, however, no general influence. In this country, as in Usanga, Usenga, and Ukimbu, there is a race called Wamia, pastoral and gipsy-like as the Watosi: they have mixed and intermarried with their Wakimbu neighbours, and of late years have suffered severely from the incursions of the Warori. From Unyangwira a cross road leads south-west to the frontier of Khokoro: on the south-east the district extends to the well-known provinces of Usenga and Usanga, called by the Arabs Senga and Sanga.

Usenga, the more easterly (?), was pointed out as bearing 170°

14. To the district of Kiwere.

15, 16, and 17. To two mtoni.

18 and 19. To Ngiriruwwa of the Sultan Mserari a Mkimbu.

20. To a mtoni.

21. To the dominions of Sultan Kipambawe. At this place the Wakimbu are mixed with the Warori.

22 and 23. To flowing and standing waters in a dense jungle.

24. To the settlement of Mui'Gumbi, chief of Urori.

25 and 26. To flowing and standing waters.

27. To the district of Nyapanda.

28, 29, and 30. Through the jungle.

31. To the settlement of Gumirwiga, son of Mui'Gumbi.

32. To the land of Ubena.

From Unyanyembe to Urori (twenty-four stations) the Arabs reckon one month's march, halts included. The route above detailed is called the Nguru road; there is another and a shorter line through the jungle to Urori, which is reached in about thirteen long marches. As will be explained, caravans in these days never enter Unyanyembe sidé Urori; some, however, return by it to the coast, to avoid the extortion of Ugogo. When the E. African Expedition was leaving Kazeh, Sallum bin Hamid, an influential merchant, was preparing for the provisionless journey between Unyanyembe and Urori.

* Pemba-m'oto, in Kisawahili, would mean "light the fire;" in Kinyamwezi it is used to signify a flag or standard.

(corrected to 160°) from Kazeh: it is separated by one or two marches from its neighbour Usanga. The direct road reaches them after ten to fifteen days—about 120 miles—and they lie at the western extremity of the second third of the distance between the coast and Unyanyembe. This would place them in about $6^{\circ} 30'$ s. lat. and E. long. 34° . Both settlements belonged of old to the Wámiá, mixed with the Wakimbu. They were the great termini of the Arab trade before it extended throughout Unyamwezi in 1830-35. Passing through Uzaramo and Khutu, the main trunk-road traversed the southern mountains of Usagara along the line now called the Kiringawana.* At the district of Maroro it fell into the valley of the Rwaha, followed up the northern or left bank of that great stream, and, reaching the meridian of Usenga, it turned away from the river northwards. At Usanga and its adjoining district, in those early days of exploration, the Arabs and the coast merchants met the caravans from Unyamwezi, bringing with them the slaves and ivory collected from the inner countries. The caravans made no stay; they built neither house nor store, but lived in tents and under hides, and after hurriedly completing their barter they returned coastwards. About thirty years ago they persuaded the Wanyamwezi to act as porters, and thus, enabled to increase their business, they began to push onwards into Unyanyembe. Presently the Warori became troublesome, and Ugogo, whose real or fancied perils had compelled merchants to make a long détour, was safely traversed; the stream of commerce then flowed in a direct line, and Usanga and Usenga were deserted. The incursions of the Warori have caused a chronic famine in the land, which deters caravans from venturing into it.

Three stages lead from Unyangwírá to a well-known district of Ukimbú called Kiwere or Kiwele. In 1858 it was governed by a sultana. It is rich in cattle and populous; the villages are composed of the usual round huts: the Warori have repeatedly possessed themselves of, and have been dispossessed of this country; they were lately driven out of it by the Watuta. On the westward it extends to the frontier of K'hokoro, and it is about eight days' march from that province.

From Kiwere the road, trending to the S.S.E., after six short marches through jungle and cultivation, reaches the settlement of Sultan Kipambawe, on the northern confines of Urori. Thence, four stations place the traveller at the capital settlement of Mui'

* See Chap. IV. Mr. Cooley ('Geography of N'yassi,' p. 23) gives the route thus:—"Through the country of the Wohaha (Wahehe) eight days . . . to Powaga eight days . . . from Powaga to Usenga five days; and thence to Sanga two days . . . Atumba (Itumba of the Wakimbu) five days. Onanguira (Unyangwira), the first town of the Monomoezi country, one day." It must be observed, that Mr. Cooley places in his itinerary Usenga to the eastward of Usanga; the Arabs consulted at Kazeh inverted the position.

Gumbi, the powerful chief of Urori. Eight more stages, making a total of thirty-two from Kazeh, abut at Ubena. This province is inhabited by a tall and fierce race, ever at war with the Warori: the rival tribes are probably connected, as according to the Arabs they understand one another.*

The important races in this part of E. Africa are the Wakimbu, the Wahehe, and the Warori. The two former have been alluded to in the regions where they were traversed. The latter may be briefly described by the Arabs of Kazeh, with the addition of a few notes obtained from a return caravan of Wasawahili, the only trading-party which for some years has marched from the coast to Urori and Ubena.

The Warori extend from the western frontier of the Wahehe about forty marches, principally along the northern bank of the Rwaha River, to the meridian of Eastern Unyanyembe. They are a semi-pastoral people, continually at war with their neighbours. They never sell their kith and kin, but they attack the Wabena, the Wakimbu, the Wahehe, the Wakanongo, and the races about Unyangwira, and drive their captives to the sea, or dispose of them to the slavers in Usagara. The price is of course cheap; a male adult is worth from two to six shukkah merkani. Some years ago a large plundering party, under their chief Mbangeria, attacked Sultan Kalala of the Wasukuma; they were, however, defeated, with the loss of their leader, by Kafirra of Kivira, the son-in-law of Kalala. They also attacked Unyanyembe, and compelled the people to take refuge on the summit of a natural rock-fortress between Kazeh and Yombo, and they have more than once menaced the dominions of Fundikira. Those mighty boasters the Wagogo hold the Warori in awe; as the Arabs say, they shrink small as a cubit before foes fiercer than themselves. The Warori have wasted Uhehe and Unyangwira, and have dispersed the Wakimbu and the Wania. They closed the main road from the seaboard by exorbitant blackmail and charges for water; and about five years ago they murdered two coast Arab traders from Mbuamaji. Since their late defeat by the Watuta they have been comparatively quiet. When the E. African Expedition entered the country they had just distinguished themselves by driving the herds from Ugogi, thus preventing any entrance into their country from that district. Generally, like the pastoral races of this portion of the peninsula, the object of their raids is cattle: when a herd falls into their hands they fly at the beasts like hyenas, pierce them with their assegais, hack off huge slices, and devour the meat raw.

* The Wasawahili, moreover, declare that they can understand the languages of Urori and Ubena without study, which is not the case with the other dialects in this part of the African interior.

The Warori are small and shrivelled black savages. Their diminutive size is doubtless the effect of scanty food, continued through many generations; the Sultans, however, are a peculiarly fine large race of men. The slave specimens observed had no distinguishing mark on the teeth; but in all cases two short lines were tattooed across the hollow of the temples. The male dress is a cloak of strung beads, weighing 10 or 12 lbs., and covering the shoulders like a European cape: some have a large girdle of the same material round the waist. The women wear a bead kilt extending to the knees, and at other times a wrapper of skin. The favourite weapon is a light, thin, and pliable assegai; warriors carry a sheath of about a dozen, and throw them with great force and accuracy: the bow is unknown. They usually press to close quarters, each man armed with a long heavy spear. Iron is procured in considerable quantities both in Ubena and Urori. The habitations are said to be large tembe, capable of containing 400 to 500 souls. The principal articles of diet are meat and milk, fattened dog's flesh—of which the chiefs are inordinately fond,—maize, holcus, and millet. Rice is not grown in these arid districts. They manage their intoxication by means of pombe made of millet, and even bhang, which is also smoked in gourd-pipes; they mix the cannabis with their vegetable food. The Warori are celebrated for power of abstinence; they will march, it is said, six days without eating, and they require to drink but once in the 24 hours. In one point they resemble the Bedouins of Arabia: the chief entertains his guests hospitably as long as they remain in his village, but he will plunder them as they leave it.

The last caravan which entered Ubena from the coast set out in June, 1857, and returned in the beginning of 1859. The up-march occupied six months. The return was protracted to an equal length by an accident, and the remainder was employed in traffic. The party was commanded by a Coast Arab, Sulayman bin Rashid el Riami, accompanied by a Wasawahili, Mohammed bin Gharib. They had a total of 600 men, armed with 150 guns; freemen and slaves, hired on the seaboard for eight to ten dollars per head, as the Wanyamwezi refuse to traverse these countries. The caravan followed the trunk road westward to Maroro in Usagara; thence, deflecting southwards, they forded the Rwaha River, which was found to be knee-deep. They travelled through the Wahehe and the Wafaji, south of and far from the stream, to avoid the Warori who occupy both banks. The Sultan of these freebooters, being at war with Ubena, would not have permitted travellers to pass on to his enemies, and even in times of peace he fines them, it is said, one half of their property for free conduct. On the right hand, or to the south, from

Uhehe to Ubena was a continuous chain of highlands,* pouring affluents across the road into the Rwaha River, and water was procurable only in the beds of these nullahs and fumaras. The land was dry and barren; in fact, Ugogo without its calabashes. Scarcely a blade of grass appeared upon the whitish-brown soil, and the travellers marvelled how the numerous herds obtained their sustenance. The masika or rainy monsoon began synchronously with that of Unyamwezi, but it lasted little more than half its period in the north. In the sparse cultivation, surrounded by dense bush, they were rarely able to ration oftener than once a week. They were hospitably received by Kimanu, the Jyari or Sultan of Ubena. His people, though fierce and savage, appeared pleased by the sight of strangers. The Wabena wore a profusion of beads, and resembled in dress, diet, and lodging the Warori; they were brave to recklessness, and strictly monarchical, swearing by their chief. The Warori, however, were the cleaner race; they washed and bathed, whilst the Wabena would purify teeth, face, and hands with the same fluid.

At Ubena the caravan made considerable profits in slaves and ivory. The former, mostly captured or kidnapped, were sold for four to six fundo of beads, and, merchants being rare, a large stock was found on hand. About 800 were purchased, as each Pagazi or porter could afford one at least. On the return-march, however, half of the property deserted. The ivory, which rather resembled the valuable article procured at Karagwah than the poor produce of Unyanyembe, sold at 35 to 70 fundo of yellow and other coloured beads per frasilah of 35 lbs. Cloth was generally refused, and the kitindi or coil-armlets were useful only in purchasing provisions.

On its return the caravan, following for 18 stages the right bank of the Rwaha River, met with an unexpected misfortune. They were nighting in a broad fumara called Bonye,† a tributary from the southern highlands to the main artery, when suddenly a roaring rushing sound of waters fast approaching and the cries of men struck them with consternation. In the confusion which ensued 150 men, for the most part slaves and probably ironed or corded together, were carried away by the torrent, and the porters lost a great part of the ivory. In the neighbourhood of the Rwaha they entered the capital district of Mui' Gumbi, the chief, after a rude reception on the frontier, where the people, mistaking them for a plundering party of Wabena, gathered in arms to the

* If this chain be of any considerable length, it may represent the water-parting between the Tanganyika and the Nyassa Lakes, and thus divide, by another and a southerly lateral band, the great Depression of Central Africa.

† A more dangerous place for encampment can scarcely be imagined, yet the E. African everywhere prefers it because it is warm at night, and the surface is soft,

number of 4000. When the error was perceived, the Warori warmly welcomed the traders, calling them brothers, and led them to the quarters of their Sultan. Mui' Gumbi was apparently in his 70th year, a man of venerable aspect, tall, burly, and light-coloured, with large ears, and a hooked nose like a "maghrabi." His sons, about thirty in number, all resembled him, their comeliness contrasting strongly with the common clansmen, who are considered by their chiefs as slaves. A tradition derives the origin of this royal race from Madagascar or one of its adjoining islets. Mui' Gumbi wore a profusion of beads, many of them antiquated in form and colour, and now unknown in the market of Zanzibar : above his left elbow he had a lumpy armlet of ivory, a decoration appropriated to chieftains. The Warori expressed their surprise that the country had not been lately visited by caravans, and, to encourage others, the Sultan offered large gangs of porters without pay to his visitors. These men never desert ; such disobedience would cost them their lives. From the settlement of Mui' Gumbi to the coast the caravan travelled without accident, but under great hardships, living on roots and grasses for want of means to buy provisions.

The southern route from Unyanyembe to U'ungu* numbers, as has been said, 30 marches, which may be reduced to 23. The route lies through Western Nguru and Unyangwira to Kiwere, which is reached in 14 marches ; thence the line deflects from s.e. to s.s.w., and, after 16 stages, terminates at the southern extremity of U'ungu.

The Wa'ungu are a warlike people, rich in cattle and ivory. They are well armed with bows and arrows, spears, and shields of wood or bull's hide, so large that they serve on occasions as tents. The head-quarters of the chief are described to be a boma or palisade about two miles long, roomy enough to contain the cattle, and surrounded by a river which flows from high and rocky hills in the neighbourhood. A bridge of planking is rendered necessary by the number of crocodiles ; it is removed when enemies approach, and the place is considered impregnable. Ironga, the late Sultan, after long suffering from the attacks of the Warori, called in the assistance of the Watuta : † the latter were victorious, but they proved themselves almost as fatal to their friends as to their enemies. When the E. African Expedition left Unyanyembe, the son of Ironga was preparing to wreak vengeance upon Fundikira, its Sultan, for putting to death, under pretence of espionage, certain of his father's emissaries, who, commissioned to purchase cattle, had established themselves in a style of grandeur which excited the ruler's suspicion or cupidity. The avenger of blood, unwilling to

* The word is variously pronounced, U'ungu, Uwunga, Uvungu, Ivungu, and I'ungu.

† See Chap. VII.

provoke the Arabs, sent to them a civil message, importuning that red flags planted before their establishments should cause them to be respected. The merchants, however, sensibly declined this offer of immunity, and their refusal prevented a campaign.

The principal authorities concerning the south-western or K'hokoro line are the Shaykhs Saïd bin Shnayn and Hilal bin Násir el Harisi, who had both made repeated journeys along that route. According to them, there are two distinct roads from Kazeh to K'hokoro. The direct passes over 13 marches of desert ground, in an almost straight line, and by hard work the nearest limits of cultivation may be reached in seven days. The other path traverses Nguru and Unyangwira as far as Kiwere, the 14th station, which adjoins the eastern boundary of K'hokoro.

Both roads are described as easy, without stony hills or deep mire. Three nullahs and several pools afford abundant supplies of water, and the streams are with difficulty passable after rains. Two tribes must be traversed, the Southern Wanyamwezi and the Wakimbu, who in these parts have a great chief, Msongo: the Warori lie to the south and the south-east. K'hokoro produces in abundance maize and holcus, sweet potato and manioc. The principal inquiry is for white, blue, and yellow porcelains; in exchange the people give cattle and ivory, mostly collected from Urori and the southern regions. In this part of the country slaves are generally in demand, and the people willingly receive them for tusks; porters for caravans must, therefore, be collected in Unyamwezi. According to the Arabs, the Wabisa tribes of the Northern Nyassa cross the southern parts of K'hokoro on their way to the eastern coast. K'hokoro is connected with Ufipa by a route of 18 to 20 stages. From Ufipa 15 stations lead to Iwemba, and from Iwemba, according to the Arabs, 30 marches conduct the traveller to Usenda, the capital of the Kazembi. Such are the estimates given by the merchants; they must however be suspected of some exaggeration.

Beyond K'hokoro travellers mention a large ziwa or lake called Rukwa, Rugwa, or Ikwa: they describe it doubtfully. According to some eye-witnesses, it lies 7 short or 15 long marches east of K'hokoro, which would place it somewhere between that district and U'ungu. Others make it stretch four marches westwards of K'hokoro, and even join it on, after heavy rains, to the Tanganyika Lake; whilst, on the other hand, it is declared that the main road from Unyamwezi to Eastern Marungu passes between the Tanganyika and the Rukwa. The most credible details concerning this ziwa are the following. The length of the lay from n.w. to s.e., according to others, from e. to w., is six days. Its lesser diameter is a long stage (15 miles); the water is stagnant, varying from ankle-deep to breast high, broadening and deepening

after rains; it is crossed in three days. Travellers must pass the nights as they best can upon some mound partially submerged, and they find canoes or hollowed logs of wood to ferry their goods across the profounder parts. The lake is surrounded by high land, which does not however confine the bed, and the thickly-wooded banks abound in elephants, large game, and aquatic birds.

The most interesting geographical feature in these southern provinces is their main drain, the *Rwaha River*, which carries off the surplus humidity of all the lands lying to the south and the east of *Unyamwezi*, namely *Ubena*, *Urori*, *Ugogo* with its flanking deserts, and *Western Usagara*. Its source is unknown: some make it arise from *K'honde* (?), a hilly district lying to the west or the south-west of *Ubena*: others derive it from a *ziwa* or lake six days distant in a south-westerly direction from *Usanga*. About *Urori* it is a perennial stream, knee-deep in the dry season, but unfordable during the *masika*: the banks are low, the sole is rocky, steep, and full of rapids. About the meridian of *Maroro* it breaks with a violent stream through a deep gap in the eastern ghauts of Africa, and, reaching the maritime plain, it spreads out, according to the people, into an extensive lagoon. In the country of the *Wandandu*, about ten days' paddling or six to seven marches from the coast, it receives a shorter but a deeper branch called the "*Uranga*." * This stream is termed in its upper bed the "*Mwera*," probably after a province on the western frontier of the *Wangindo* people, which is connected by commerce with *Kilwa*. The two main branches, *Rwaha* and *Uranga*, thus anastomosing, obtain the quasi-generic name of *Rufiji*, flow in a broad, deep stream through their alluvial valley, and, forming a diminutive delta, pass through eleven or twelve channels into the Indian Ocean, directly opposite the "*Kisimani Mafiyah*," or the western watering-place on the island of *Monfia*, in $7^{\circ} 56'$ s. lat.†

Unaccountably omitted in Capt. Owen's survey of the eastern coast of Africa, the *Rufiji River* appears about 1819 for the first time in the map of M. Saulnier de Mondevit, Lieut. de Vaisseau, accompanying M. Lislet Geoffroy's Memoir on a Chart of Madagascar. ‡ It was alluded to by Lieut. Hardy, who accompanied Capt. Smee in 1811, when sent by the Government of Bombay to collect information on the eastern coast of Africa. His

* The *Rufiji* proper is correctly called the river of *Uranga* by Mr. Cooley's informant, Mohammed bin Nasur, of Zanzibar; and the African geographer identifies it ('Inner Africa Laid Open,' p. 60) with the *Rouenga* of early writers. It is not, however, as he supposes, by any means, "the southern state," or "the parent state," or "the cradle of the race" of *Unyamwezi*. This theory arises from confusing the *Wanyassa* of the *Maravi Lake* with the tribes of the *Tanganyika*.

† Other details concerning the mouth of this stream will be found in Chap. II.

‡ Mr. Cooley ('Geography of N'yassi,' pp. 24, 25). See also 'Nouvelles Annales de Voyage,' 'Observations sur la Côte de Zanguebar,' tome vi.

description is, however, somewhat enigmatical. "The river Linfee, or Loffih, is conjectured to give passage to the waters of the Niger. It serpentes for eleven days, and then goes direct for three months and fifteen days, up to a lake in which is a high rocky hill with a few trees called Zuwarhah." In those days geographers still persisted in deriving all the circulation of Africa—the Niger, the Nile, the Zaire or Congo, the Espírito Santo (the Manisa, King George, or Manyassa of Delagoa Bay), the Cuama or Zambesi, the Juba or Govind, and the Ozi or Pokomozi—from a single heart, the Great Central Lake, which here appears under its African name "Ziwa," corrupted to Zuwarhah. "The western branch of this river from the hill is called Condoha, and it is said to go four or five months' journey to its source. Marorrer is a town on its banks, one month from the hill, and Singoser is another, about two months; the tribes inhabiting the western branch are called Wangarah, but this is probably the name of an island formed by two channels, twenty-eight days from the hill." The preceding pages will explain the corruptions and misapplications of Mukondokwa,* Maroro, and Usagozi. Wangarah is either a mistake for the Wasagara tribe or more probably for Uranga, the south-western affluent of the Rwaha. Mr. Cooley has correctly described the lower course of the Rufiji; but beyond that point he has necessarily fallen into error. "We see, therefore, that the accounts furnished by Hardy fortunately bind together all these details, and that the Magozi as well as the Swaha, which receives the river of Maroro, are but portions under different names of that great river which he traces up from the mouth of the Lufiji by Maroro and Sagozi to Zuwarhah, that is, Ziwa or the lake." In this passage the Malagarazi influent of the Tanganyika is confounded with the Rwaha, which has assumed the un-African form Swaha, and a fanciful affinity of names has connected the Rwaha with the Ziwa,†

* Mr. Cooley interprets "Condoha" as a local name, Kindoca, derived from the Mundoca, a tribe well known at Kilwa. The Wandoka, however, inhabit only the rising grounds immediately behind the maritime plain, and do not extend for any distance into the interior. Perhaps Condoha may have been written for K'honde, the place where the Rwaha is said to rise. In Kisawahili K'honde means a plantation on high ground. According to Mr. Cooley, "Conda, in Congolese, and also in Sawahili, means hill." But, in Kisawahili, konda (or conda) is a "fist," and konde, an adjective, "thin" or "weak."

† The plural of ziwa is not, as Mr. Cooley supposes, wáziwá, which would make it an animate noun, but máziwa. Ziwa signifies primarily a breast or dug, hence a pond, or lake; and máziwa is the generic term for milk. Moreover, no Arab would "inflect ziwa after his own fashion, making for the plural, perhaps, ziwalab, and for the adjective ziwái." The Arabized plural of ziwa is ziwát; as mbuga, a swamp, becomes, in the Arabic of Zanzibar, bugát. As has been mentioned, Mr. Cooley has interpreted marusura (morisuro) to signify water in general. But, in the Kihiao, the dialect of Uhiao, lusuro means a river or flowing stream; whereas mezi, or mesi (in the Kisawahili májí), is the common term for water.

which probably represents not the Tanganyika, but some expansion of the stream in the central bed or a reservoir at the head.

The curious error of the 'Mombas Mission Map,' in confounding Nguru, south of Unyamwezi, with Ngu or Nguru, the hilly region near Saadani, and thus causing the stream to flow across the beds of the Kingani, the Mgeta, and other rivers, has already been alluded to.

CHAPTER XII.

SKETCH OF THE ETHNOLOGY AND PHYSIOLOGY, THE DRESS AND ORNAMENTS, OF THE VARIOUS TRIBES EXTENDING FROM THE COAST OF ZANZIBAR INTO CENTRAL INTERTROPICAL AFRICA.

THE Greater South African family, so called to distinguish it from the Lesser South African of the Hottentots, Bushmen, and their congeners,* seems to occupy an ethnological position between the Semitico-African races—Libyans, Berbers, Oriental Nubians, Abyssinians, Gallas, Danakil, and Somal—extending from the north of Mount Atlas to the eastern Horn of the continent, and the aborigines of Central Negroland, the western projection of Sene-gambia, and the countries behind the Bights of Benin and Biafra. The habitat of this great negroid people, who appear to be mulattos in the maritime region, and who gradually merge, without abrupt or broadly-marked line of demarcation, into the true negro about the central parts of the continent, may be roughly laid down in extent from 2° to 3° N. lat. to the regions subtending the Cape of Good Hope. It is connected by analogies of grammar and vocabulary, and is divided by the minor details of language into three great families, the western, the eastern, and the southern.

The southern family has separated into the Kafirs properly so called, the Bachwana, the Balakahari, the tribes of Ovampo, and a host of minor subdivisions. Tradition and history lead to the conclusion that this people has gradually extended itself from northern foci of emigration.

* The Lesser South African families are all cognate in language, which, according to Mr. Norris and other philologists, presents some curious points of resemblance in inflexion with the Coptic tongue, and is a branch distinct from the dialects of the Greater South African race. Physiologically, the former are separated from the latter by a greater animality in the shape of the prognathous jaw and the elongated pelvis, by the pyramidal skull, dwarfish stature, and small and delicate extremities. It has long been believed that the Hottentots and their congeners once occupied the whole of the land immediately north of the Cape, and that they were gradually encroached upon, demoralized, and almost dispersed by the more warlike northern tribes of Kafirs and their congeners. "Imperishability" is said by Dr. Livingstone to "form a remarkable feature in the entire African race." This assertion requires, however, to be confirmed by time. Barrow ('Travels in Southern Africa,' chap. iii.) prophesies very differently: "The name of Hottentot will be forgotten, or remembered only as that of a deceased person of little note."

The western family includes the races of the seven kingdoms which formerly composed the extensive empire of the "Mani-Kongo"—the Lord of Congo, extending, with 300 leagues of seaboard, between Capes Lopez and Negro, with an extreme inland breadth of 500 or 600 miles.

The eastern family stretches over the coasts of the Mozambique and Zanzibar, from Cape Delgado to the Equator, where it is limited by the lands of the Gallas and the Somal. Interiorly, numerous tribes extend into the central regions of Intertropical Africa; they are all similar in appearance and cognate in idiom, although the difference of vocabulary renders neighbouring tribes unintelligible to one another. It has been appropriately called the "Zangian" family of language, and it differs radically from the Semitico-African of the Caucasian races, and the multitudinous jargons of Negroland proper.

The Zangian races appear of a mixed blood; their physiology varies as it inclines to the predominating element. The Wasawahili, and the Wamrima of the coast, like a similar race in Western India,* are sprung from the intercourse of foreign traders and emigrants—Phenicians, Jews, Arabs, and Persians—with the African aborigines. Even in the days of the *Periplus* (first to third century of the Christian era) the maritime lands were subject to the chiefs of Yemen; yet the appearance of the population is markedly more negroid than that of the semi-Caucasian Galla and Somal. There is also a tolerably regular gradation of races from east to west; the Coast Arabs are somewhat more Semitic than the Wasawahili, and the latter are more Arabian in appearance than the neighbouring tribes of Pagans. These, in turn, are less African than the people of the central regions; and the Balonda (Walonda?) of Mwata ya Nvo are almost pure negroes, with long, narrow heads, thick lips, flat noses, and elongated calces.

To this general rule there are many exceptions. The Wakhutu and Waziraha, quasi-maritime races, are darker and more degraded than their western neighbours the Wagogo; and the Wajiji are coal-black, though bounded northwards by the light-complexioned Warundi. These, however, are local varieties, which depend upon the multitude of agents—altitude and degradation, heat and cold, dryness and humidity—expressed by the word climate. It is easier to explain the phenomenon of a graduated scale, and of a different organization, amongst tribes living under the same parallels of the same continent, in similarity of diet and dress, manners, customs, and religion, by their long intercourse with foreign settlers and colonists, than to suppose that the aboriginal

* The Maplahs or Mapillahs, "sons of mothers," for instance, derive their origin from sires of Omani, Hazramanti, and Yemeni blood, who in ancient times trafficked with and settled in the country.

races of the eastern half are naturally negroid, as their W. African congeners are naturally negro.*

The several types in E. Africa have endured sufficiently long to acquire a certain permanence and continuity, and an experienced eye, without the aid of tooth or skin marks, can easily distinguish between the people of the several regions. The exceptional appearances of sooty skins, short crisp hair, and degraded forms, contrasting with the higher organizations of a clan, may be explained by the mixing of the tribes, by migration and intermarriage, and by the prevalence of slavery. The system of kidnapping, and of commandos, and of border wars, causes also confusion of blood. In addition to the details concerning the Wakamba, the Wadoe, the Wasagara, the Wahha, the Wakimbu, and the other dispersed tribes mentioned in the preceding pages, the following instances of ready migration may prove that the E. African is still a semi-nomade. The Wanyika, now near Mombasah, came originally from the lands about the Ozi River. The Washenzi, or serviles of Usumbara, who in appearance resemble the darker Wanyika, lately emigrated from the regions lying south-west of the Rufu or Pangani River. The Wasegeju, who are palpably the Mossequios of the Portuguese historians,† in ancient times, according to their tradition, inhabited Ushangaya, or, as it is called in our maps, "Shiraz Town," near Bette, or Patta Island; thence expelled by the Wasawahili, aided by the Gallas, they fled to Pokomo, an inner province on the Ozi River, and another blood feud drove them to their present seats near Wanga and Tanga, south of Mombasah. But a few months ago, a tribe of Wasukuma, or northern Wanyamwezi, compelled to an exodus by civil war, marched with their wives and families, arms and cattle, into the territory of Fundikira, chief of Unyanyembe, and obtained from him, as is customary, lands for support. The forest soon became a field of

* Our older travellers almost universally agreed in deriving the Kafirs of the southern angle of Africa from the Bedouins of Arabia. The principal points of resemblance fixed upon were their pastoral habits and manners, their hospitality to guests, their tent-shaped huts, and the universal practice of circumcision. But the customs of the people are the produce of climate, the circular hut is general throughout the wilder tribes of Africa, and circumcision appears to be originally an African, not an Asiatic rite. Other authors claim for them a Jewish or Israelitic origin, quoting their circumcisions, betrothals before marriage (the custom of all Easterns), purification by water and shaving the head (natural in hot climates), transferring impurity or infection from a sick individual to a slain animal (an instinctive and general superstition), the marriage of a brother's widow (a practice probably arising from a desire to keep property in the family), the chiefs sitting in judgment at the gate (which, being the most public place, is of course selected), and the women hastening from the settlement to meet warriors returning from an expedition (a custom which need not be derived by one people from another).

† They appear as a large tribe near Malindi, who in 1589 stemmed the tide of "Muzimba" invasion. (Mr. Cooley, 'Inner Africa Laid Open,' p. 124.)

black-jacks, the beehive huts rose in a week, the felled or fired trees were converted into a palisade, and the hamlet assumed the name of the immigrant headman. In these lands there is no necessity for men to tread, as the people say, upon one another.

The whole race of Southern Africa is divided, by the accidents of climate and position, into three orders. First are the fierce pastoral and nomadic tribes, the Wamasai, the Wakwafi, and the Watuta, who, like the Gallas, the Somal, and certain of the great Kafir race, rely upon the produce of their cattle, the chase, and the foray. They are the constant terror of the more civilised races around them; with them

Plunder and murder are the kingdom's laws;

and to be wealthy, especially in flocks and herds, is to invite an attack. Secondly ranks the semi-pastoral, as the Wakamba, and other races, who, though without settled abodes, apply their women and children to the cultivation of the soil. They are not to be trusted; they ever retain a propensity for feud and foray, and they feel but little disinclination to abandon their lands. And the third step in progress has been taken by the Wazaramo, and the many distinct tribes lying between the coast and the centre of the continent. They are tamed to strangers by an inordinate love of commerce and barter, but the nature of their intercourse, which is based upon slavery, renders them prone to bloodshed and civil war.

It is difficult to precise, without statistical data, the fecundity of the E. African race, as evidenced by the average number of offspring. The Arabs agree in asserting that, in spite of favourable physical conditions, the women are not prolific, and the impression borne away by a passing traveller is that, except in rare cases of polygamy, families are small. The same phenomenon appears to have been remarked by explorers in Western Africa. It is salient amongst the slaves at Zanzibar. There even artificial means for obviating the troubles of maternity are generally practised; a woman will not become a mother when she knows that her child may at any moment be torn from her arms. In E. Africa, besides climate, the checks upon population are scanty diet, early marriages, —which, even amongst civilized people, are rarely fruitful—and the gross depravity of the race, apparently the modus operandi by which nature annihilates the savage tribes, like the Red Indian and the Australian, that come into collision with higher organizations.

Eastern Africa is no exception to the general rule which makes the maritime tribes infamous for daring and treachery, the ready instruments of all villainy, and the most dangerous to travellers. This arises partly from the degradation of the people by a climate adverse to energy and industry, partly from the evil effects of semi-civilization, and a familiarity with the foreigner

which degenerates into contempt. North of the Pangani River the Wadigo and the Wasegeju ; southwards the turbulent Wazegura, the cannibal Wadoe, and the Wazaramo between the Kingani River and the parallel of Mbuamaji, the Wangindo tribe behind Kilwa, and the Wamakua of Mozambique, are all instances of the exclusiveness which has caused Africa to be compared with the cocoa-nut—hard to penetrate only from without.

Although amongst the races of E. Africa no caste, properly so called, exists, there are superior and inferior tribes. Of the former description are the Wahinda and Watosi, of the latter the Wahha and the Washenzi of Usumbara. The origin of these races, who, without apparent cause, are considered cheap and vile, is never known ; they may be either the remnants of the subjugated aborigines, or ancient outcasts from existing tribes. As the pure Hindoos had their mlenchhas, or mixed breeds, and the Arabs of Oman and Yemen still retain, contrary to the spirit of El Islam, their Akhdam, or serviles, so in Africa the Gallas have their Dahalo and Ariangulo, the Somal their Midgan, the Wamasai and Wakwafi their Wandurubo, the Kafirs their Fingos or beggars, the Bachwanas their Balalas, and even the wretched Hottentots their Sonquas and Bushmen.* In the East, moreover, the blacksmith is generally considered a low-caste man. The "Lohar" is despised in India. In Maskat the "Haddad," as well as the tanner, the shoemaker, and the dyer, never belongs to a noble tribe ; in El Hejaz, the Khelawiyah, who work in iron, are held contemptible. Amongst the Abyssinians the blacksmith is hated and feared as a magician. The Somal will not intermarry with the "Handad;" and the Wakwafi look upon the Elkono as slaves.† The "mhesi," or iron-worker of Unyamwezi, is of the Wafyoma tribe ; he is considered vile, not by birth, but by occupation.

The principal fighting tribes in this portion of E. Africa are the Wazegura, the Wamasai and their kindred the Wakwafi, the Wazaramo, the Warori, the Watuta, the Warundi, and the Waganda, concerning whom details have already been given. It may be observed, the present high road from the Zanzibar coast beyond the Wazaramo to Ujiji runs through comparatively quiet and peaceful races ; on the north and south of it the land swarms with extortionate sultans and predatory subjects, who cannot be visited except by large and well-armed caravans.

Cannibalism in this portion of Africa is rare ; it results either

* The same phenomenon may be traced in European history : the Helots of the Spartans, the Limigantes of the Sarmatians, and the Lapps of the Finns are familiar instances.

† This race is found in the adjacent provinces of Usambaro and Utumbara, and their Sultan is Mutawazi. In Southern Uyofu they are subject to the chief Mnaya Murunda, and in Usui to the Sultan Sawarora. See Chap. X.

from policy or from necessity. The maritime Wadoe, for instance, practised it with effect in their wars with the Wakamba, and have continued it against their present enemies, the Wazegura. The Lakist Wabembe are compelled at times, like the Midgan of the Somal, to become man-eaters. Our older travellers in Western Africa there describe some races, like the Anziki, Anzigui, or Bowman tribes, as "cannibals from choice, eating human flesh, not from necessity, but from preference;" the Jagas (Giagases) are also mentioned as the "greatest cannibals and man-eaters that be in the world, for they feed chiefly on man's flesh." These, however, are the theories of the sixteenth and seventeenth centuries. It appears more rational to explain, by necessity or policy, the accidental prevalence of a practice opposed in some sense to nature, rather than to seek in it a religious or a superstitious motive, or an acquired predilection for the article.

The aspect of the great mass of this negroid race is not unprepossessing. They are tall and well-made mulattos, rather above the European standard; a giant or a dwarf is never seen, and instances of deformity are exceedingly rare. In youth their limbs are frequently long, lank, and loose, like those of the wilder animals compared with the tame; in middle life the frame often becomes, especially in women, somewhat too bulky, like that of the Anglo-Saxon, for the extremities; amongst Africans this conformation denotes weakness. The favourite standing-position is cross-legged, their gait when walking is light and springy, and they run like Basques, though, like all untaught men, they raise the leg too high for speed. But they can neither climb nor jump, they ignore wrestling, boxing, gymnastics, manly games, and athletic exercises, which enable man to apply his force, and in muscular strength and power of endurance they appear, as usual, inferior to the civilized.

The expression of the countenance differs in the several tribes. Amongst the least cultivated it is wild, restless, and startled, or fierce, surly, and sullen, or coarse and disagreeable. The features, exposed to the glaring sun and the nipping cold, acquire that contraction of the muscles and fixed distortion which distinguish the weatherworn classes in Europe. The traveller often remarks a childish wondering stare, and an absence of intelligence, kindness, and serenity, which makes the Moslems pray for protection against the mortification of such countenances. In the nobler tribes there is not, unfrequently, a high degree of vivacity, intelligence, and merriment. A handsome man, except amongst the chiefs, is never seen, and an agreeable face strikes the eye as exceptional. Some of the women, however, especially the wives and daughters of sultans, may be called beautiful. The brow is high and cylindrical, and well-curved brows set off dark, sparkling eyes, which give a peculiar animation to the countenance. The nose is

straight and Grecian, as may be seen amongst the Abyssinian and the Somal; the face is oval and regular, the complexion a clear glossy brown, and the hair a jetty black, dashed as it were with blue. The teeth are beautifully white and regular, distracting attention from the somewhat tumid and everted lips, and the full lower jaw, which display African blood. The expression is at once soft, amiable, and spiritual—the true “*καλος*” in womanhood. Such faces are not more admired by the European than by the African, who might be supposed to have a predilection for lips thicker, and noses flatter, and jowls wider, than those of the general. But beauty in the works of nature, as in those of art, rests upon no arbitrary law, no empirical formulæ; and a beautiful woman, amongst all races and in all climates, is equally admired—a practical contradiction of the philosopher’s “Association Theory.” The children are distinguished by that grotesque prettiness which we admire in the young of the lower animals. The general aspect in old age, when the limbs have shrivelled and the muscles have relaxed, especially amongst the women, is hideously ape-like.

The cranium is of the long-narrow shape, and the parietal portions are so crushed in the regions of acquisitiveness, ideality, and constructiveness, that, by the side of the African’s, the Arab’s flat skull appears well filled out, and the Indian’s a “bullet-head.” As in the Egyptian, the line rises from benevolence, which is low, by an upward elongation to firmness and self-esteem; these organs are well developed, whilst the rest of the arch, supposed to contain the moral sentiments, wants roundness and height. Not unfrequently the forehead converges to a central protuberosity, where phrenologists locate eventuality, like the convex boss of a shield, and the surrounding organs fall away from it. The cranium from behind often appears of cauliflower shape, the coronal region is ignobly flat, the occiput—the breeching of the gun—weakly droops, and the bony processes, where cautiousness is supposed to reside, protrude like knobs. The osteological structure is by no means so heavy, dense, and massive as in the pure negro cranium, and the skull sits easily upon the neck.

The form of the face is a compound of Asia in the upper, and of Africa in the lower parts. The forehead, amongst the finer types, and in most of the chiefs, is high and commanding. Usually it is a long-narrow, the ridge where the temporal muscles are inserted projects well over the eyes, and the glabella are marked and prominent—a common conformation amongst savages and barbarians who exercise their perceptive more than their reflective faculties. The bridge of the nose is rarely flat, though not without a deepening in the interorbital portion, and the eyes are wide apart. On the other hand, the depth of the temporal fossæ, and the protrusion of the zygomata and the malar bones, producing, with the

peaked and weakly retreating chin and high crown, a lozenge-like aspect, the large continuous teeth, with the prominent and extensive alveolar edges sloping outwards, and the prognathous jaw so protruding that, in profile, the lips project beyond the nose-tip, assimilate the physiognomy to that of the negro, and caricature the "felon-face" of Europe.

The skeleton is of eumorphous proportions, straight, firm, and square. The lower ribs are somewhat spread out, making the body almost as broad at the waist as over the pectoral muscles, and a "thin flank" is rarely seen, except in early youth, when the figure is lank and spare like a leopard's. The tibia is not offensively convex, unless bent forward and deformed by early porterage, and the forearm is rarely of the ape-like dimensions which distinguish some of the Somal. The bones of the hands and feet are large, flat, and unsightly; the heel protrudes more than in the Caucasian, but less than in the real negro.

The muscles are often of remarkable volume, calculated to impress the locomotive system with a false aspect of physical strength. They are seldom, however, strong and knotty, and they present few asperities of projecting bone and sinew; in this point the East African resembles the Indian. In the case of the well-fed a thick layer of adipose tissue makes the surface appear smooth, regular, and deficient in manly firmness.

The skin, like the hair, is of the melanous order, though the leucous, as appears in the preceding pages, is not wanting.* There are three distinct zones of colour,† regulated by the manifold influences of atmosphere and hygrometry, diet, exposure, profession, and similar modifiers. The people of the maritime regions and of Eastern Usagara have rough dirty skins, of a dull pale black, like that of diluted Indian-ink; sometimes, though rarely, passing into a chocolate tinge. From the central elevations of Usagara the complexion improves; and in Ugogo, Uhumba, and Umasai appears the yellow skin so much prized in Eastern Africa. Many have that tawny leonine hue of the Arabs which some physiologists suppose was the original colour of the Adamical family, and which both negro and white combine in admiring, though each looks upon the other as the abnormal man. From Unyam-

* See Chap. III. Dr. Livingstone explains the absence of albinos in Southern Africa by the superstitions of the people, who will not allow them to live. In E. Africa specimens were seen in Tanga and Uzaramo (the maritime regions), in Unyamwezi, and on the route to the Nyanza Lake. The Arabs spoke of many others.

† Similarly, Dr. Livingstone (chap. xviii.) remarked in Southern Africa three different zones of colour. The tribes on the E. and W. seaboards are described as very dark; two bands of lighter colour, the western of which embraces the Balakahari and the Bachwana, lie about 300 miles inland from both coasts; and, finally, in the central basin or depression of the continent, the people are almost blacks.

wezi to the Tanganyika Lake, in those low levels where heat and humidity are in excess, the people—Wajiji, Wavira, Wafipa, and others—become lamp-black, without a shade of brown. The cold produced by rarefied atmosphere in elevated lands materially modifies the complexion; the mountaineers, for instance, are of an “Indian red” colour, with a warm coppery tinge, which gives “salt”—that is to say, an appearance of life and health—to the skin. Again, much allowance must be made for the seminality of the various races.* The ruling classes—Wahinda and Watosi—are tawny-red or amber-brown; a tint of yellow ochre is sometimes seen, and in individuals it deepens to a sepia or bronze colour. The lower races—Warori, Wahehe, and Wataturu—pass through various gradations of dark-bronze, black-brown, and lamp-black. As a rule, fairness of complexion distinguishes the chiefs. The texture of the skin is fine and uniform in those who can afford fat, oil, or butter to soften the epidermis and to draw out its colour. When unguents are not used the outer coat is scurfy, scaly, rusty, covered with excrescences, dull and dirty in tint, and seldom without disease. Some tribes disguise, like the Hottentots, their complexions, by rubbing in unguents of red ochre and mineral earths until the eye cannot distinguish the natural from the artificial. Rugosities and deep lines soon seam the skin; these effects of hardship, exposure, and a debauched life give to youth the aspect of old age.

The original purpose of tattooing was possibly by diminishing the sensibility of the skin to act as a succedaneum for clothing.† In course of time, when the necessity became less obvious, it was retained as a distinction between the tribes, and was considered in the light of an ornament ‡ Some races, however, like the Wan-

* So the Arian Brahman of India, though inhabiting a low and damp, a hot and inland region, is a sallow man, and the Parsis are still Persians, though exposed to Indian influences for 1000 years; whilst the Tibetans, placed in one of the highest of inhabited regions, in an atmosphere intensely pure, clear, and cold, are a dark race. The Syrian Jews, who have inhabited Aden for at least 23 centuries, are still a light-coloured people, with yellowish hair; whilst some of the hill tribes of Yemen, probably tainted with Abyssinian blood in remote ages, are almost black.

† Our older travellers attribute the origin of the practice to a total want of mental resources, and to the pleasurable sensation caused by the slight irritation of the process. As, however, it supplies no employment, and the operation, moreover, is by no means agreeable, the practice must be otherwise explained. The savage, the barbarian, and the civilized man agree in attempting to improve upon the noblest work of the Creator. They flatten or circularize their skulls, shave their heads or twist and curl their straight hair, mark and brand their foreheads, trim or dye their eyebrows, pluck out their eyelashes, gash their cheeks, bore holes in their ears and noses, remove their moustachios, mow or eradicate their beards, chip or extract their teeth, stain their gums, compress their hamstrings, and distort their feet. For the same reason, they tattoo patterns upon the skin.

‡ El Islam has vainly attempted to eradicate this old habit, which man seems to have learned in his infancy. The Fellahs of Egypt will see the faces of their

yika, have given up these "beauty-marks," declaring that they will no longer spoil their skins. The operation is performed at any time of life; the pattern is drawn by points or by slits with a common knife or razor; and the colouring matter is pounded charcoal mixed with grease or castor-oil. The tattoos of the several tribes have been described, each *in loco*. By the help of this relief ornament and a dark skin, their appearance does not suggest to a European the idea of nudity; and they are far less ignoble objects, in point of outward show, than the squalid and poorly clad sons of civilization.

The peculiar effluvium of the person marks the consanguinity of the negroid with the negro races. It is not observed amongst the Egyptians, the Abyssinians, the Gallas, and the Somal: it prevails, however, amongst the Wasawahili and Wamrima of the coast and island of Zanzibar, and extends throughout the interior.* It appears to arise from a peculiar conformation and development of the sebaceous glands, not, as some have thought, from want of cleanliness; in fact, ablution seems to have no effect upon it. Nor is it the result of diet, for the negro preserves his peculiarity even when born and bred in foreign lands.† It is an odour *sui generis*: brought forth by excitement of mind or exercise of body, it taints a room, and becomes unbearable to some Europeans, causing nausea and fainting fits. The secretion from a negro's feet will stain a mat; and if he sit upon a light-coloured plank, he will leave a mark which can be obliterated only by scouring-drops.

The hair of these races has invariably a crisp, short, and stiff curl; the crinal line is low, and often encroaches upon the temples. There are two modes of growth, whose difference is partially attributable to race and blood, one being distinctive of the African, whilst the other belongs to the rest of the human family. The negroid's scalp is sometimes dotted, like the negro's, with diminutive black tufts like pepper-corns, and the hair springs as if from a system of moles, displaying when short a network of epidermis between lumps not unlike dry leaves of black tea. When such is the case, the pile, on the breast for instance, grows in similar patches. In the generality, however, the hair, like that of Europeans, is equally distributed over the scalp, and covers the head in a frizzly bush.

women tattooed in spite of the Olema, and the poorer classes in many parts of Arabia still ornament their skins with "dagh," lines, like cupping cuts, upon the forehead, cheeks, and chin, round the wrists and ankles, and extending from the legs to the throat. Even the sanctity of Meccah cannot do away with the palpably pagan "mashali" or face-cuts. Amongst the Nilotie tribes, those of Arab origin, as the Shagiyah and their neighbours, affect the tattoo, which the African races about them ignore.

* The people of the Comoro Islands have, it is said, the African effluvium, which somewhat invalidates their claim to pure Koraysh origin. The Malagash (of Madagascar) have it not.

† For a curious effect of climate, commonly reported by the Arabs, see Chap. VI.

The locks do not stand erect like those of the Somal; having attained a certain length, they depend, and after four or five inches the fibre splits and ceases to grow. The colour is of a deep dull black, only in favoured cases purple-blue like the raven's wing, and in age or when unanointed it inclines to a sunburnt-brown or a dark oakum colour, most unpleasant to the eye. The East African is by no means a hairy man.* Little pile appears upon the body; the honours of the chin grow late in life, and never attain Caucasian length. The beard, which sometimes sprouts in the pepper-corn form, is plucked out, like the moustachios, with iron pincers; when sufficiently bushy it is adorned with beads. The eyebrows, and especially the eyelashes, are carefully removed by both sexes, giving a weak and staring expression to the organ which they are made to protect.

The negroids apply all the powers of their minds to dressing the hair in the most fantastic of fashions; as in bygone days of crinal landscapes and perruques, he is "most gallant that is most monstrous to behold." The implements of decoration are the razor and the comb. The former is a spearhead of soft malleable iron, enclosed in a cylinder of wood, ivory, or metal, sometimes prettily ornamented with brass and copper wire; and a man of "fashion" walks about with the case bound by a string above his left elbow, and at times uses it as efficiently as the Roman matron wields her bodkin. It requires an African scalp to withstand the intolerable scraping of the blade, which is sharpened upon a kino'o, generally a bit of hornblende used as a hone. The shanuo or comb is made of four to six bamboo-splints, several inches long, pointed at the tips, and bound together at the base with fibre or unravelled thread; it parts the most tangled locks peremptorily as would a two-pronged steel fork.

Women usually shave the whole head. Some of the juniors merely clear away the forehead hair, to make a clean circle of curls which rise short and thick, crisp and shiny, like a skullcap of Astrakhan wool. Others plait the lengths together in little parallel lines of various directions, as, for instance, from the back of the head to each ear: this is by no means a becoming coiffure; more scalp than hair appears, and the partings look like the furrows of a melon. Others wear, like the men, a fan-like fringe of diminutive ringlets extending down the neck, and cut short, à l'enfant, across the forehead. They are fond of queues and accroche-coeurs, to which, tightly bound with wire or fibre, they communicate a bending line of beauty, which forcibly suggests the idea of a young porker's tail.

* The Arabs, as has been mentioned, complain that baldness and loss of beard are the results of a long residence in E. Africa. Here, as elsewhere, they have a prejudice against a slave gifted with a large and bushy beard.

The popular head-dresses have been described when treating of the several tribes. The Wazaramo, for instance, affect the clay-thatch ; the Wagogo, Wasagara, and Wanyamwezi wear the ringlet-fringe of ancient Egypt ; in Karagwah and Uganda the kishshah or crest and the tiara of abrus-seeds are preferred ; the Wajiji and other Lakists leave upon the shaven scalp crescents and circlets, squares and patches, buttons, spirals, and screw-like lines of hair, which are not allowed to grow long ; and the Wasukuma decorate their locks with fierce-looking plumes of white ostrich-feathers. Some men shave the poll, after the fashion of monks, others the whole head, others the brow from ear to ear, others clear away a patch on one side, and others leave shushah or calottes of locks, large and small, upon the apex of the cranium. A more peculiar decoration is a long cone of upright hair, rising from the scalp, which is scraped off round its base, and whipped round with brass wire : some have from two to half-a-dozen upright pigtails, with tufty ends like stiff brushes, cresting the head. The most becoming ornaments are the ringlets decorated either with a bead at the end of each twist, or a shining brass ball about the size of a pea : these ornaments are disposed without regularity, here thick, there rare, in number perhaps forty or fifty, and differing in size and colour. Hair, when worn long, is generally confined close to the head and above the ears by a fillet of cord, leather, or cloth, and the most gaudy bandeau is the most admired. Huge bunches of the spoils of domestic cocks, jays, owls, and crested cranes are mounted on leather or inserted in a cone of gourd-rind, and tied with thongs under the chin. The zebra's tail is a favourite ornament : some wear four of these articles stiffly projecting from different parts of the head ; others prefer a rouleau of red stuff, others a ngala or strip of black-and-white zebra's mane projecting like a gloria from the head, giving it a most grotesque aspect. A brave will distinguish himself, like the wives of the Kafir chiefs, by a cap made of the spoils of the leopard, the ocelot, or the black monkey ; the paws repose upon his shoulders, the tail depends along his back, and he is happy if he can render his appearance more striking by bands and patches of scarlet cloth. Others affect strips of hide or cows'-tails, dried and stiffened, standing straight up, like the unicorn's armature, from the forehead. This list of crinal decorations may suffice as a specimen of the infinite diversity of savage taste. It would be difficult, indeed, for the mind of man to imagine anything grotesque or fantastic, or mean or hideous, which may not be found used as an ornament by the East Africans.

Amongst these negroids the face is rarely oval ; it is either lozenge-shaped, or in some races, as the Wagogo, round and fleshy. The outspread zygomata often make it appear from behind broader than the cranium ; a conformation which gives a peculiarly animal look.

Seen in profile, the facial angle is disagreeably acute, the lips forming the projection. The eyes are sometimes straight and well opened; the Wazaramo, the Wakhutu, and other tribes, however, resemble the Chinese in the seeming obliquity of these organs, caused by the skin being drawn tight over the wide and open malar region. Squinting is common, blindness exceedingly rare; the cases being probably cleared off by starvation. The cornea is seldom black; it usually varies from a deep chesnut to a dark-brown, spotted here and there with yellow specks. A white "white" is almost unknown; the conjunctival membrane is brown-yellow, reddened at the inner corners with many small blood-vessels. The lower portion of the orbits is often dark and puffy.

The ears are rather small than large, and are placed exceptionally high on the head; the bottom of the lobe, when seen in profile, is often parallel with the bridge of the nose. They sometimes stand out like wings, and give an expression of exceeding curiosity with great auditory powers. As has been mentioned, the lobe is generally enlarged by artificial means, and the helix or circuit of the auricle, as well as the alvearium or hollow, is sometimes pierced to admit rings.

The high narrow bridge of the nose, with its sinking root, assimilates the feature to that of the Africo-Arabian type in the north; the rest is a transition to that of the western negro. It scarcely, however, comes under the denomination of flat-nose, to which the Jews attached an idea of degradation. The alæ are patulated; their superior edges are placed near the eyes; the nostrils are broad and distended, and the swelling tip, seen in profile, either droops towards the lip or turns upwards. Piercing the nostrils with ring-holes is confined to the slave-girls of the Arabs and to those intended for the market of Zanzibar.

The mouth, which marks the ethical man, is rather wide than thick. Seen in profile, it has a depth like that of the fishes. The upper jaw is prominent, the lower protrudes, and the circumoral region is full and fleshy, arguing a fine development of the masticatory apparatus. The lips, projecting somewhat beyond the perpendicular of the nose, when pouted or shot out in anger give an expression of surly and mulish obstinacy. They are somewhat tumid, with sharp everted edges; the superior is thick, bulging, and rarely pointed in the centre with that bowlike form which Europeans hold beautiful; whilst the "villanous hanging" of the inferior suggests coarse and evil passions. Some tribes, especially those dwelling inland from Kilwa, pierce and distend the upper lip, causing it to expose the upper incisors, to protrude unnaturally, and to form an artificial hare-lip.* The gums are rarely dark or dis-

* See Chap. VIII. This custom extends north of the Equator. The Dor tribe, dwelling at some distance west of the Nile, pierce the lip, and adorn it with a bit of stick nearly as large as a man's finger.

coloured like those of the Somal; but the people argue well of this deformity. The teeth would be white and regular if man would not insist upon improving the handiwork of his Maker by avoiding resemblance to the lower animals. The various peculiarities of chipping and extracting the teeth, which seem intended to produce a lisp, have been described when treating of the several races. The former operation is performed by slow degrees with a little axe or a bit of sharpened iron; it is always done in early childhood, it requires no after treatment but abstinence from hot food for a few days, and apparently it does not so injure the enamel as to destroy the tooth.

In many of the pagazi or porters, the neck is bull-like, short, heavy, and broad, everywhere a sign of health and condition, of strength and endurance in man. The "ewe-neck," which marks the highly nervous temperament of civilized people, here is found only amongst the sick and the half-starved. In the throat the prominence called Pomum Adami is moderately developed. The shoulders look narrow, owing to the squareness of the trunk; and their horizontality, like those of the Indians, makes them appear high and ungraceful. A sloping shoulder is rare, except when the muscles and the adipose tissue are much developed, and a round or a heavy shoulder is almost unknown. The back is invariably straight—the result of carrying burdens upon the head; in many individuals, however, the spinal bone is too much curved inwards for strength or beauty.

Certain peculiarities distinguish the thorax in both sexes. In men the breasts are often placed an inch or two lower and farther apart than those of Europeans and Asiatics. In women they are firm, conical, and distant only in earliest youth, and even young girls often lose the charms of waving line and smooth surface in consequence of loose fibre and lymphatic temperament. Tumescence indeed appears to characterize the human as it does the vegetable productions of Inner Africa. After the first child the mammae become flaccid, pendent, and elongated; the nipple grows large, and its discoloured areola is raised high above the surface of the bosom. As middle age approaches the breasts are enormously distended; a mother suckles her child when carried upon her back; and the people seem to affect these hideous dependencies, as they are often seen artificially enlarged by the pressure of a cord. In old age they shrink and wither to mere lappets of skin.

The arms in both sexes are tapering and symmetrical; in the males, however, their smooth rounded contour wears the semblance of effeminacy. The fingers are long, but the thumb seldom reaches to the first joint of the index; consequently the hand, though large-boned, is not a perfect prehensile instrument. The leathery palm is of a livid freestone colour verging towards

yellow-red, and the nails resemble claws. Some of the chiefs allow the nails of the left hand to grow long for the purpose of tearing their meat; this is a boast of living on royal diet, and the common people, who are compelled to work, do not care to affect it. Amongst the wilder tribes the fingers are hard as bones, probably the result of grubbing in the earth for roots and worms.

The abdomen is but moderately developed in youth; as age increases, its proportions are exaggerated, it protrudes like the breasts, and often depends though in a minor degree; in age it becomes wrinkled and shrivelled. As amongst the Somal, the umbilical region is so protuberant as to resemble hernia in childhood, but the unsightly excrescence disappears with time. Some individuals, especially females, display a tendency towards steatopygia*—a deposit of pure fat over the glutei muscles; it never attains the dimensions of the Kafirs and Hottentots in the southern or of the Somal races in the northern regions. In women there is frequently a want of fatness in the hips and haunches, probably in consequence of the elongation and the narrowness of the pelvis; some, however, are beautifully proportioned as the Venus Callipyge. Parturition is attended with little pain and less danger, such is the grand prerogative of savage over civilized races.

The legs are by no means as symmetrical as the arms. The thigh is plump and well made, and the knee small and rounded, but the thin calf is placed so high as sometimes to encroach upon the hams, and the tibia shows an approximation to the "cucumber-shin" of the real negro. As the traveller recedes from the coast he observes an increased clumsiness of the extremities; amongst the lowest types the thick ankle, and the large round foot, with its low instep, resemble the organ of a young hippopotamus. The os calcis is long and straight, projecting in the form commonly called "lark-heel." The toes are rather spread out to the front than approaching one another, as results in Europe from the use of shoes; each is separated from its neighbours, and they are rarely used in lieu of fingers as by the almost quadrumanous Indian. The soles are more horny and discoloured than the palms, and the foot-nails, from walking bare, are often deficient or distorted.

The temperament of these negroids is usually bilious-nervous, the former type predominating, often purely lymphatic or bilious-lymphatic, and rarely sanguine. Like the lower animals, they require only food and rest to fatten; the women-slaves of the Arabs, who can afford a more liberal diet than the poor and parsimonious African, are sometimes prodigies of obesity. The race is still

* Dr. Livingstone (chap. v.) remarks that this African peculiarity always appears in the Boers of the Cape, and curiously enough asserts it to be "the characteristic of Arabs and other African tribes."

Macrobian :* arriving late at maturity, passing through life without severe toil of body or mind, thinking only of eating, drinking, and wiving, it is not wonderful that the digestion of an ostrich, waiting upon the appetite of a hyæna, should carry them far into old age. With the civilized the sword wears out the scabbard, otherwise the tenure of life allotted to man—threescore years and ten—appears as arbitrary as it is curt.

Amongst these races the voice is coarse and unmodulated, a marked contrast to the delicate and musical organs of the Somal and of various negro nations. Like all savages and barbarians, they speak loudly and harshly; there is nothing more distressing to the ear than the shrill strident chatter of Ugogo and Ujiji. The evil effect is heightened by the frequent recurrence of bellowed exclamations and ejaculations like the instinctive sounds of animals: these form in some tribes the greater part of conversation.† The laugh is rarely low and musical; it is not however without heartiness and merriment, and the traveller often recognises the yelping yow! yow! yow! of the stage-negro.

Dress in these lands is, as it should be in a temperate and uniform climate, simple, light, and airy. The people are free from fashion and its fashioners, and are not compelled by the cold to protect themselves with broadcloths and blankets: both these articles have been imported, but their high price has prevented a ready sale. As has been mentioned elsewhere, the native industry has hitherto produced cloths more curious than comfortable or useful.‡ One reason perhaps which causes them to avoid heavy and close-fitting clothing is their want of abstersents. The sun, the smoke, and the fire, with grease and inveterate grime, are still the barbarian's favourite suit. Some of the more civilized have learned from the Arabs to wipe, on first rising, their faces, hands, and feet, with a wetted palm, and to use a toothstick. They have, however, no mundatories; the African skin does not wash well, though it takes, like the hair, a high polish when regularly and abundantly greased. The use of unguents acts as raiment against heat and cold by preventing profuse perspiration and evaporation; it is the more necessary in a land where extreme lassitude and thirst necessitate a great consumption of poculents. They ignore soap, and the Arabs declare that the various wood-ashes contain too little alkaline matter to saponify fat. In Karagwah only, the juice of the plantain-tree is used to remove grease, and the pounded heart is

* Instances of centagenarianism amongst the slaves are quoted by the Arabs. Farhan, a man who died in the service of H. H. the late Sayyid Saïd, lived, it is said, 120 years.

† Of these, some instances have been given when treating the subject of Unyamwezi.

‡ Specimens of the Unyamwezi fabric were lodged at the R. G. Society's rooms in Whitehall-place.

kneaded into a kind of cake, which is broken up in warm water before application to the skin. The Wanyamwezi and other tribes purify themselves with ghee and the oil of the ground-nut and the castor-bean, which, not being cold drawn or cleansed, soon becomes rancid. The Arabs import soap from Zanzibar, and a wood called liwa from northern Madagascar, which is used like the ringa or washing-nut of India; it is rubbed upon a stone till lather is produced, and it does not, like the ringa, burn black hair to a rusty brown.

Upon the whole, however, the quantity of cloth in East Africa astonishes the traveller accustomed to the scant costume of the starveling Indian ryots. Dealing with the mere essentials rather than with the refinements of modesty, the costume is probably the first invented by man, and the Arab still, during his pilgrimage, reverts to it as the primæval habit of his race. The head is made by nature to go bare. Turbans are confined to the diwans or chiefs of the coast, and the wealthier Wasawahili and Wamrima content themselves with the kummah or coarse fez without the tassel, imported from Bagdad *via* Basrah, or an Alfiyyah, the embroidered Surat cap: both these articles are worn without the cleanly takiyah or white cotton calotte universal in Turkey and Egypt. The feet are either naked or protected by a single strip of untanned hide; the Wanyamwezi and other races, before putting on a new pair in a strange place, spit in them to ward off disease and accidents. Among chiefs the sandal is sometimes adorned with disks of white shell or fish-bone, fastened to the thong, which, passing between the first and second toes, girds both sides of the foot. The wooden pattens called kabkab are confined to the diwans, and the barbarians have not learned to imitate the "spartelle" of plaited palm-leaf used by the Baloch mercenaries. The only protection for the legs against the poison of snakes is a thong of hide with the long hair left on, bound tightly under the knee: this wildest of decorations distinguishes the Wanyika, the Wagogo, and other races. Perhaps no article of European attire, even the hat, excites their astonishment so much as boots and shoes. The remainder of the dress is a loin-cloth of white domestics or of indigo-dyed cotton near the coast; in the interior, westward of Ugogo, the quantity of cloth sensibly diminishes, and a goat's-skin or a tree-bark apron hangs from the shoulder. The wealthy prefer "cloths with names," that is to say, various checks and patterns of silk and cotton imported from Maskat and Bombay; and a piece of similar material thrown over the upper part of the body is the extent of luxury. The only approach to a cut garment is the kizbao, a kind of waistcoat, sleeveless, and open at the sides. The grass and fibre kilts worn by the women have already been described. Several tribes—the Wataturu, the Wahehe, the

Warori, and the Wahumba for instance—attach no idea of indecency to appearing without clothing : in Karagwah even nubile girls rarely wear dress ; but in no part of E. Africa are the matrons unclothed, nor is there a race that can fairly be called nude. The nature and quantity of attire, in fact, best evidence the social state of the tribe.

The principle of ornamentation in these lands is that nothing must be allowed to remain as the Creator made it : at the same time decoration has fixed rules, and the African would be as ashamed of a strange or outlandish ornament as an Englishman. The savage, guided by his eye, not his reason, preferred to the jewels and precious stones offered by Vasco de Gama the more brilliant and beautiful glass beads and brass wire which that civilized man considered trash. And as was the African in 1500,* such is he in the present day ; he ignores gold and silver, pearls and diamonds have no charm for him, but he preserves his instinctive admiration of the objects that delight the childhood of other lands. The traveller will grossly err if he takes out an investment of unfashionable articles : gems and jewels are as much prized in Africa as beads and cowries are in Europe. The E. African must be acquitted of a barbarian offence ; he seldom attempts to inspire terror by the artificial horrors of his aspect, nor is he of a coquettish turn of mind ; apparently deficient in personal vanity, he stares to gratify curiosity, not like the Asiatic to attract a stare ; he cares little for a looking-glass ; in his choice of dress and ornaments he is guided rather by the desire to please himself than to attract the regard of others ; and though he loves, childlike, a new toy, he is ready to part with it at the end of a week. A single necklace will pass through half a caravan.

The principal ornaments are beads and ivory, brass, copper, and iron. Of the former article there are in E. Africa† about 400 current varieties. Strings and bands of these decorations are worn round the head, neck, forearm, wrist, fingers, and waist ; they are tied above and below the knee, and sometimes, though rarely, round the ankles ; when exposed to dust and dirt they are liable to be spoiled. In some tribes the women wear bibs and the children aprons of this article ; and, as has been mentioned, the Warundi and the Wasukuma convert them into graceful tiaras.

Ivory is worked with a rough jagged blade like the rudest saw ; a week is required to cut through a tusk. It is then made into a variety of bracelets called *mpogo* in distinction to the metal *kikomo*. There are many varieties of this article. Some are heavy

* In the 'Periplus' (chap. xvii.), among the exports to E. Africa were "several kinds of glassy stone."

† The prices and other details concerning beads will be treated of in Chap. XVI., under the head of "Commerce."

cylinders like dice-boxes, about four to six inches long, split to admit the hand, and joined longitudinally by a rivet of brass wire; others, worn above the elbow, are disks from one to two inches broad and deeply grooved in the outer rim; others are broad and shallow, in the shape of a twisted quoit. Men also wear four or five small round ivory rings, which are placed with difficulty over the hand, and are kept upon the wrist by a circlet of dried entrails called sikombe. The arm below the shoulder is also decorated with a curious ornament of ivory, horn, or wood; it looks like two inverted chevrons so joined that they form an aperture for the arm; the branches projecting above the shoulder are wound about with wire. Almost all men wear upon the wrist or ankle a talisman for relieving pain and preserving life, called by the Wasawahili Hirizi, from the Arabic Hirz, and by the inner people Mpigi. It consists of two little bits of wood, rhinoceros horn, or other substances duly prepared by the medicine-man, and strung on close together, but not touching each other, to a strip of bark or a thong of snake's skin, which is bound round the limb affected. The poorest classes wear with it one or two rings of dried goat-entrails or circles of cowhide with the hair on.

The principal use of metal is in wire, with which almost every article is decorated. Brass is preferred to copper by the southern tribes as being less expensive; those in the north, the Mamasai for instance, affect iron. Only the large sizes are imported into the country; these the Mhesi or blacksmith draws out with the vilest of tools and with abundant patience. The kitindi or coil-armlet, and the sambo or wire-circlet, have already been described. Besides these, the people affect kikomo, massive and clumsy bangles, worn, as in ancient Egypt, round the wrists and ankles; the most valuable are of Risas el Abyaz (zinc), which even at Zanzibar costs 12 dollars for 35 lbs. Earrings are made in independent circlets called mapete; more generally, however, a stout coil of wire is twisted in and out of the distended lobe-hole, presenting the appearance of a number of rings tightly packed in rouleaus. A favourite form in Unyamwezi is a bit of brass wire worked into a figure resembling the descending node. Of late they have begun to wear a brass ornament shaped like a pair of tongs, with the diverging legs about an inch long, connected by a small circle fitting into the ear. When the lobe is so distended as to become a thin strip and in danger of being torn, the ornaments are either supported by a string passed over the head or transferred to holes piercéd in the outer rim of the ear. The rim is often piercéd with a row of small holes, which, for want of something better, must be adorned with bits of stick or straw.

Some of the decorations in E. Africa are peculiarly grotesque. The neck, especially in Usagara, is adorned with a broad horizontal

ruff of thick brass wire; the circlets becoming loose by wear present in profile a concave instead of a plain surface, and suggest the idea of a metal charger supporting the head. Some of the sultans wear brass collars projecting like plate-rims from the throat, and engraved with fanciful arabesques. Another usual ornament is the kengele, a hollow or solid ball of copper, hung by a string round the neck. Chiefs and mediciners wear as a badge the smoothed base of a conical shell,* about two inches in diameter by 0·75 in. in depth: it is valued as coming from the sea, and represents about half the price of a slave. Similar to this, but of inferior value, is the kirangwa, a small disk or crescent of hippopotamus tooth or polished white shell brought from Zanzibar. In some E. African tribes, especially those near the Equator, ostrich eggs, cut into circles, crescents, and other fantastic forms, are extensively used. Strings of four or five of these crescents, which are bored longitudinally, are worn as a necklace by the wealthy. The waist is adorned with a coil of thin wire twisted round elephant's or zebra's hairs to the thickness of a man's finger. In some parts the ankles are confined with small-linked iron chains; and the northern tribes, Wámásái and Wákwáfi, wear round their necks one to five brass watch-chains, preferring those with square or oblong links: a single chain sometimes confines the hair. Iron bells, varying in diameter from a sixpence to half-a-crown, are worn in single and double rows below the knee and round the ankle: this is considered rather a grand and pretentious decoration. For a similar purpose they attach to the sambo, or wire-circlets, beads, shells, and bits of tin, which announce by jingling the wearer's approach, and justify a peculiarly affected strut. Most men carry for comfort and display a kipungo or fly-whisk, the tail hair of some wild animal—the zebra is preferred—attached to a little handle of ivory or wood. Some of these cannot be purchased, as, made up by the mediciner, they are held to be prophylactics. Another favourite talisman is the parahárá, a goat's horn well oiled, tipped with wire, and mysteriously closed with wax or a stuffing of sambo: slung over the shoulder, it is allowed to depend at the side.

* Dr. Livingstone describes and gives a sketch of the shell, and the ornament made of its end, in his 16th chapter.

CHAPTER XIII.

NOTES OF THE CHARACTER AND RELIGION OF THE EAST AFRICANS; THEIR
SLAVERY, GOVERNMENT, AND POLITY.

THE study of psychology in Eastern Africa is the study of man's rudimental mind, when, subject to the agency of the material world, he neither progresses nor retrogrades. He would appear rather a degeneracy from the civilized man than a savage rising to the first step, were it not for his apparent incapacity for improvement. He has not the ring of the true metal ; there is no rich nature, as in the New Zealander, for education to cultivate. He seems to belong to one of those childish races which, never rising to man's estate, fall like worn-out links from the great chain of animated nature. He unites the incapacity of infancy with the unlikeness of age ; the futility of childhood, and the credulity of youth, with the scepticism of the adult and the stubbornness and bigotry of the old. He inhabits beaten lands. For centuries he has been in direct intercourse with the more advanced people of the eastern coast, and though few have seen an European, there are not many who have not cast eyes upon an Arab. Still he has stopped short at the threshold of progress ; he shows no signs of development ; no higher and more varied orders of intellect are called into being. Even the simple truths of El Islam have failed to fix the thoughts of men who can think, but who, absorbed in providing for their bodily wants, hate the trouble of thinking. His mind, limited to the objects seen, heard, and felt, will not, and apparently cannot, escape from the circle of sense, nor will it occupy itself with aught but the present. Thus he is cut off from the pleasures of memory, and the world of fancy is altogether unknown to him. Perhaps the automaton which we call spiritual suffers from the inferiority of the mechanism by which it acts.*

The East African is, like other barbarians, a strange mixture of good and evil : by the nature of barbarous society, however, the good element has not, whilst the evil has, been carefully cultured.

As a rule, the civilized or highest type of man owns the sway of intellect, of reason ; the semi-civilized—as are still the great nations of the East—are guided by sentiment and propensity in a degree incomprehensible to more advanced races, and the barbarian is the slave of impulse, passion, and instinct, faintly modified by sentiment, but ignorant of intellectual discipline. He appears,

* It is supposed (Dr. Livingstone, chap. xxv.) that the temperature of the negro's circulation differs from the average of the white man ; the inference, however, requires a more extensive collection of observations.

therefore, to the civilized man a paralogic being,—a mere mass of contradictions; his ways are not our ways, his reason is not our reason. He deduces effects from causes which we ignore; he compasses his ends by contrivances which we cannot comprehend; and his artifices and polity excite, by their shallowness and “inconsequence,” our surprise and contempt. Like that Hindoo race that has puzzled the plain-witted Englishman for the century closing with the massacres of Delhi and Cawnpore, he is calculated to perplex those who make conscience an instinct, an inspiration, which elevates man to the highest ground of human intelligence. He is at once very good-tempered and hard-hearted, combative and cautious; kind at one moment, cruel, pitiless, and violent at another; sociable and unaffectionate; superstitious and grossly irreverent; brave and cowardly, servile and oppressive; obstinate, yet fickle and fond of changes; with points of honour, but without a trace of honesty in word or deed; a lover of life, though addicted to suicide;* covetous and parsimonious, yet thoughtless and improvident; somewhat conscious of inferiority, withal unimprovable. In fact, he appears an embryo of the two superior races. He is inferior to the active-minded and objective, the analytic and perceptive European, and to the ideal and subjective, the synthetic and reflective Asiatic. He partakes largely of the worst characteristics of the lower Oriental types—stagnation of mind, indolence of body, moral deficiency, superstition, and childish passion; hence the Egyptians aptly termed the Berbers and negroes the “perverse race of Kush.”

The main characteristic of this people is the selfishness which the civilized man strives to conceal, because publishing it would obstruct its gratification. The barbarian, on the other hand, displays his inordinate egotism openly and recklessly; his every action discloses those unworthy traits which in more polished races chiefly appear on public occasions, when each man thinks solely of self. Gratitude with him is not even a sense of prospective favours; he looks upon a benefit as the weakness of his benefactor and his own strength; consequently, he will not recognise even the hand that feeds him. He will, perhaps, lament for a night the death of a parent or a child, but the morrow will find him thoroughly comforted. The name of hospitality, except for interested motives, is unknown to him: “What will you give me?” is his first question. To a stranger entering a village the worst hut is assigned, and, if he complain, the answer is that he can find encamping ground outside. Instead of treating him like

* So of the natives of Angola, Dr. Livingstone (chap. xxi.) relates that a woman derided for barrenness will not uncommonly rush away and commit suicide. Many cases of *felo de se* were heard of in E. Africa.

a guest, which the Arab Bedouin would hold to be a point of pride, his host compels him to pay for every article, otherwise he might starve in the midst of plenty. Nothing, in fact, renders the stranger's life safe in this land, except the timid shrinking of the natives from the "hot-mouthed weapon" and the necessity of trade, which induces the chiefs to restrain the atrocities of their subjects. To travellers the African is, of course, less civil than to merchants, from whom he expects to gain something. He will refuse a mouthful of water out of his abundance to a man dying of thirst; utterly unsympathising, he will not stretch out a hand to save another's goods, though worth thousands of dollars. Of his own property, if a ragged cloth or a lame slave be lost, his violent excitement is ridiculous to behold. His egotism renders him parsimonious even in self-gratification; the wretched curs, which he loves as much as his children, seldom receive a mouthful of food, and the sight of an Arab's ass feeding on grain elicits a prolonged "Hi! hi!" of extreme surprise. He is exceedingly improvident, taking no thought for the morrow—not from faith, but rather from carelessness as to what may betide him; yet so greedy of gain is he that he will refuse information about a country or the direction of a path without a present of beads. He invariably demands prepayment: no one keeps a promise or adheres to an agreement, and, if credit be demanded for an hour, his answer would be, "There is nothing in my hand." Yet even greed of gain cannot overcome the levity and laxity of his mind. Despite his best interests, he will indulge the mania for desertion caused by that mischievous love of change and whimsical desire for novelty that characterise the European sailor. Nor can even lucre prevail against the ingrained indolence of the race—an indolence the more hopeless as it is the growth of the climate. In these temperate and abundant lands Nature has cursed mankind with the abundance of her gifts; his wants still await creation, and he is contented with such necessaries as roots and herbs, game, and a few handfuls of grain—consequently improvement has no hold upon him.

In this stage of society truth is no virtue. The "mixture of a lie" may "add to pleasure" amongst Europeans; in Africa it enters where neither pleasure nor profit can arise from the deception. If a Mnyamwezi guide informs the traveller that the stage is short, he may make up his mind for a long and weary march, and vice versa. Of course, falsehood is used as a defence by the weak and oppressed; but, beyond that, he desires to be lied to, and one of his proverbs is, "'tis better to be deceived than to be undeceived."

Like the generality of barbarous races, the East Africans are

wilful, headstrong, and undisciplinable: in point of stubbornness and restiveness they resemble the lower animals.* If they cannot obtain the very article of barter upon which they have set their mind, they will carry home things almost useless to them; any attempt at bargaining is settled by the seller turning his back, and they ask according to their wants and wishes, without regard to the value of goods. Grumbling and dissatisfied, they never do business without a grievance. Revenge is a ruling passion, as the many rancorous fratricidal wars that have prevailed between kindred clans, even for a generation, prove. Retaliation and vengeance are, in fact, their great agents of moral control. Judged by the test of death, the East African is a hardhearted man. A tear is rarely shed, except by the women, for departed parent, relative, or friend, and the voice of the mourner is seldom heard in their abodes. It is most painful to witness the utter inhumanity with which a porter seized with small-pox is allowed by his friends, comrades, and brethren to fall behind in the jungle, with several days' life in him. No inducement—even beads—can persuade a soul to attend him. Every village will drive him from its doors; no one will risk taking, at any price, death into his bosom. If strong enough, the sufferer builds a little bough-hut away from the camp, and, provided with his rations—a pound of grain and a gourdful of water—he quietly expects his doom—to feed the hyena and the raven of the wild. The people are remarkable for the readiness with which they yield to fits of sudden fury; on these occasions they will, like children, vent their rage upon any object, animate or

* It is an old observation, that the lower animals of a country generally resemble in disposition their masters; where man is combative and destructive, even the domesticated brutes will be fierce and wild; and where the human race is soft and mild tempered as the Indian, their four-footed slaves are docile and tractable.

The facility with which the tame animals in E. Africa relapse into wild habits is remarkable; they appear as if only half reclaimed. A bullock will charge like a wild jungle ox, and often must be shot down before its throat can be cut. Cows will not give milk if the calves have been killed or lost; it is difficult to drive them, and they are as fond of desertion as the caravan porters. The asses display an ultra-asinine obstinacy and self-will, and they will travel in line, but it is impossible to drive a single donkey, and even when together each requires the care of a man. In hot weather they will rush for shelter to the nearest shady bush, whence nothing but the severest punishment can dislodge them. At night they are safe, if untethered, from the hyena, who never hesitates to make a meal upon the hind quarters of the timid Zanzibar ass. Those bred from Arab stallions and the mares of the country are little inferior to the pure blood in the power of kicking and bucking, rearing and running away. To secure goats on the line of march, a long cord must be fastened to one of the hind legs, or the animal will probably disappear. Though E. Africa abounds in fine wild cats, they have never been tamed; when wanted the domestic species is brought up from the coast in cages, as in the Belad Sudan generally, according to M. Werne. These civilised animals become in the interior exceedingly savage; the kittens are vicious as leopards. When they begin to eat meat, the mother, if not prevented, will carry them off to the jungles, where they soon become wild as the cat o' mountain. Even the poultry seem endowed with an abnormal amount of persistency.

inanimate, that presents itself. Their temper is characterised by a nervous, futile impatience; under delay or disappointment they become madmen. In their own country, where such displays are safe, they are remarkable for presumptuousness and for a violence of manner which elsewhere disappear. As the Arabs say, there they are lions, here they become curs. Their squabbling and clamour pass description: they are never happy except when in dispute. After a rapid plunge into excitement, the brawlers alternately advance and recede, pointing the finger of threat, howling and screaming, cursing and using terms of insult which an inferior ingenuity—not want of will—causes to fall short of the Asiatic's model vituperation. After abusing each other to their full, both usually burst into a loud laugh or womanly sobs. Their tears lie high; they weep like Goanese. After a cuff, a man will cover his face with his hands and cry as if his heart would break. More furious shrews than the women are nowhere met with. Here it is a great truth that "the tongues of women cannot be governed." They work off excitement by scolding, and they weep little compared with the men. Both sexes delight in "argument," which here, as elsewhere, means two fools talking foolishly. They will weary out of patience the most loquacious of the Arabs. This development is characteristic of the East African race, and "maneno marefu!"—long words!—will occur as a useless reproof half a dozen times in the course of a single conversation. When drunk, the East African is easily irritated; with the screams and excited gestures of a maniac he strides about, frantically flourishing his spear and agitating his bow, probably with nocked arrow; the spear-point and the arrow-head are often brought perilously near, but they are rarely allowed to draw blood. The real combat is by pushing, pulling hair, and slapping with a will, and a pair thus engaged requires to be torn asunder by half a dozen friends. The settled tribes are, for the most part, feeble and unwarlike barbarians; even the bravest East African, though, like all men, a combative being, has a valour tempered by discretion and cooled by a high development of cautiousness. His tactics are of the Fabian order: he loves surprises and safe ambuscades; and in common frays and forays the loss of one per cent. justifies a *sauve qui peut*. This people, childlike, is ever in extremes. A man will hang himself from a rafter in his tent, and kick away from under him the large wooden mortar upon which he has stood at the beginning of the operation with as much sang-froid as an Anglo-Saxon in the gloomy month of November; yet he regards annihilation, as all savages do, with loathing and ineffable horror. "He fears death," to quote Bacon, "as children fear to go in the dark; and as that natural fear in children is increased with tales, so is the other." The African mind must radically change before

it can "think upon death, and find it the least of all evils." All their thoughts are connected with this life. "Ah!" they exclaim, "it is bad to die! to leave off eating and drinking! never to wear a fine cloth!" As in the negro race generally, his destructiveness is prominent; a slave never breaks a thing without an instinctive laugh of pleasure; and however careful he may be of his own life, he does not value that of another, even of a relative, at the price of a goat. During fires in the town of Zanzibar, the blacks have been seen adding fuel, and singing and dancing, wild with delight. On such occasions they are shot down by the Arabs like dogs.

It is difficult to explain the state of society in which the civilized "social evil" is not recognised as an evil. In the economy of the affections and the intercourse between the sexes, reappears that rude stage of society in which ethics were new to the mind of now enlightened man. Marriage with this people—as amongst all barbarians, and even the lower classes of civilized races—is a mere affair of buying and selling. A man must marry because it is necessary to his comfort, consequently the woman becomes a marketable commodity. Her father demands for her as many cows, cloths, and brass-wire bracelets as the suitor can afford: he thus virtually sells her, and she belongs to the buyer, ranking with his other live stock. The husband may sell his wife, or, if she be taken from him by another man, he claims her value, which is ruled by what she would fetch in the slave-market. A strong inducement to marriage amongst the Africans, as with the poor in Europe, is the prospective benefit to be derived from an adult family; a large progeny enriches them. The African ignores the dowry by which, among the sons of civilization, inverting Nature's order, the wife buys the husband, instead of the husband buying the wife.* Marriage, which is an epoch amongst Christians, and an event with Moslems, is with these people an incident of frequent recurrence. Polygamy is unlimited, and the chiefs pride themselves upon the number of their wives, varying from 12 to 300. It is no disgrace for an unmarried woman to become the mother of a family; after matrimony there is somewhat less laxity. The mgoni or adulterer, if detected, is punished by a fine of cattle, or, if poor and weak, he is sold into slavery; husbands seldom, however, resort to such severities, the offence, which is considered to be against vested property, being held to be lighter than petty larceny. Under the influence of the jealous instinct, murders and mutilations have been committed, but they are rare and exceptional. Divorce is readily effected by turning the spouse out of doors, and the children become the father's pro-

* Nothing in European manners astonishes the Arab, or the Persian, so much as to hear that the Frank expects money with his wife.

perty. Attachment to home is powerful in the African race, but it regards rather the comforts and pleasures of the house and the society of relations and friends than the fondness of family. Husband, wife, and children have through life divided interests, and live together with scant appearance of affection. Love of offspring can have but little power amongst a people who have no preventive for illegitimacy, and whose progeny may be sold at any time. The children appear undemonstrative and unaffectionate, as those of the Somal. Some attachment to their mothers breaks out, not in outward indications, but by surprise, as it were: "Mámá! mámá!"—mother! mother!—is a common exclamation in fear or wonder. When childhood is passed, the father and son become natural enemies, after the manner of wild beasts. Yet they are a sociable race, and the sudden loss of relatives sometimes leads from grief to hypochondria and insanity, resulting from the inability of their minds to bear any unusual strain. It is probable that a little learning would make them mad, like the Widad, or priest of the Somal, who after mastering the reading of the Koran becomes unfit for any exertion of judgment or common sense. To this over-development of sociability must be ascribed the anxiety always shown to shift, evade, or answer blame. The "ukosa," or transgression, is never accepted; any number of words will be wasted in proving the worse the better cause. Hence also the favourite phrase, "Mbáyá we!"—thou art bad!—a mode of reproof which sounds simple and ineffective to European ears.

The social position of the women—that unerring test of progress towards civilization—is not so high in East Africa as amongst the more highly organised tribes of the south. Few parts of the country own the rule of female chiefs. The people, especially the Wanyamwezi, consult their wives, but the opinion of a brother or a friend would usually prevail over that of a woman.

The deficiency of the East African in constructive power has already been remarked. Contented with his haystack or beehive hut, his hemisphere of boughs, or his hide acting tent, he hates and has a truly savage horror of stone walls. Many Wanyamwezi, when visiting Zanzibar, cannot be prevailed upon to enter a house.

The East African is greedy and voracious; he seems, however, to prefer light and frequent to a few regular and copious meals. Even the civilized Kisawahili has no terms to express the breakfast, dinner, and supper of other languages. Like most barbarians, he can exist and work with a small quantity of food, but he is unaccustomed, and therefore unable, to bear thirst. The daily ration of a porter is 1 kubabah (= 1·5 lbs.) of grain; he can, with the assistance of edible herbs and roots, which he is skilful in discovering in the least likely places, eke out

this allowance for several days, though generally, upon the barbarian's impulsive principle of mortgaging the future for the present, he recklessly consumes his stores. With him the grand end of life is eating ; his love of feeding is inferior only to his propensity for intoxication. He drinks till he can no longer stand, lies down to sleep, and awakes to drink again. Drinking-bouts are solemn things, to which the most important business must yield precedence. They celebrate every event,—the traveller's return, the birth of a child, and the death of an elephant : a labourer will not work unless beer is provided for him. A guest is received with a gourdful of beer, and, amongst some tribes, it is buried with their princes. The highest orders rejoice in drink, and pride themselves upon powers of imbibing : the proper diet for a king is much beer and a little meat. If a Wanyamwezi be asked after eating whether he is hungry, he will reply Yes, meaning that he is not drunk. Intoxication excuses crime in these lands. The East African, when in his cups, must issue from his hut to sing, dance, or quarrel, and the frequent and terrible outrages which occur on these occasions are passed over on the plea that he has drunk beer. The favourite hour for drinking is after dawn,—a time as distasteful to the European as agreeable to the African and Asiatic. This might be proved by a host of quotations from the poets, Arab, Persian, and Hindu. The civilized man avoids early potations because they incapacitate him for necessary labour, and he attempts to relieve the headache caused by stimulants. The barbarian and the semi-civilized, on the other hand, prefer them, because they diminish the tedium of his monotonous day ; and they cherish the headache because they can sleep the longer, and, when they awake, they have something to think of. The habit once acquired is never broken : it attaches itself to the heartstrings of the idle and unoccupied barbarian, yet, curious to relate, the mania à *potu* was never heard of in East Africa.

In morality, according to the more extended sense of the word, the East African is markedly deficient. He has no benevolence, but little veneration—the negro race is ever irreverent—and, though his cranium rises high in the region of firmness, his futility prevents his being firm. The authoritative standard of morality fixed by revelations is in him represented by a vague and varying custom, derived traditionally from his ancestors ; he follows in their track for old-sake's sake. The accusing conscience is unknown to him. His only fear after committing a treacherous murder is of being haunted by the angry ghost of the dead ; he robs as one doing a good deed, and begs as if it were his calling. His depravity is of the grossest : intrigue fills up all the moments not devoted to intoxication.

An inferior development of veneration produces a savage rudeness in the East African. Ignoring distinctions of society, he treats all men, except his chief, as his equals. He has no rules for visiting: if the door be open, he enters a stranger's house unininvited; * his harsh, barking voice is ever the loudest; he is never happy except when hearing himself speak; his address is imperious, his demeanour is rough and peremptory, and his look "sfacciatu." He deposits his unwashed person, in his greasy and tattered goat-skin or cloth, upon rug or bedding, disdaining to stand for a moment, and he always chooses the best place in the room. When travelling he will push forward to secure the most comfortable hut: the chief of a caravan may sleep in rain or dew, but, if he attempt to dislodge his porters, they lie down with the settled purpose of mules—as the Arabs say, they have no shame. The curiosity of these people, and the little ceremony with which they gratify it, are at times most troublesome. A stranger must be stared at; total apathy is the only remedy: if the victim lose his temper, or attempt to dislodge them, he will find it like disturbing a swarm of bees. They will come for miles to "sow gape-seed": if the tent-fly be closed, they will peer and peep from below, complaining loudly against the occupant, and, if further prevented, they may proceed to violence. On the road hosts of idlers, especially women, boys, and girls, will follow the caravan for hours; it is a truly offensive spectacle—these uncouth figures, running at a "gymnastic pace," half clothed except with grease, with pendent bosoms shaking in the air, and cries that resemble the howls of beasts more than any effort of human articulation. This offensive ignorance of the first principles of social intercourse has been fostered in the races most visited by the Arabs, whose national tendency, like the Italian and the Greek, is ever and essentially republican. When strangers first appeared in the country they were received with respect and deference. They soon, however, lost this vantage-ground: they sat and chatted with the people, exchanged pleasantries, and suffered slights, till the Africans found themselves on an equality with their visitors. The evil has become inveterate, and no greater contrast can be imagined than that between the manners of an Indian ryot and an East African mshenzi.

In intellect the East African is sterile and incult, apparently unprogressive and unfit for change. Like the uncivilized generally, he observes well, but he can deduce nothing profitable from his perceptions. His intelligence is surprising when compared with that of an uneducated English peasant; but it has a narrow bound, beyond which apparently no man may pass. Like the Asiatic, in

* The Arabs of Zanzibar, instead of sending in a card, cry Hod! hod! at the door, to warn the women of a visitor's approach. The Wasawahili change the word after their fashion to Hodi! hodi!

fact, he is stationary, but at a much lower level. Devotedly fond of music, his love of tune has invented nothing but whistling and the whistle : his instruments are all borrowed from the coast people.* He delights in singing, yet he has no metrical songs : he contents himself with improvising a few words without sense or rhyme, and repeats them till they nauseate : the long, drawling recitative generally ends in "Ah! ha!" or some such strongly-nasalized sound. Like the Somal, he has tunes appropriated to particular occasions, as the elephant-hunt or the harvest-home. When mourning, the love of music assumes a peculiar form : women weeping or sobbing, especially after chastisement, will break into a protracted threne or dirge, every period of which concludes with its own particular groan or wail : after venting a little natural distress in a natural sound, the long, loud improvisation, in the highest falsetto key, continues as before. As in Europe the "laughing-song" is an imitation of hilarity somewhat distressing to the spirits of the audience, so the "weeping-song" of the African only tends to risibility. His wonderful loquacity and volubility of tongue have produced no tales, poetry, nor display of eloquence ; though, like most barbarians, somewhat sententious, he will content himself with squabbling with his companions, or with repeating some meaningless word in every different tone of voice during the weary length of a day's march. His language is highly artificial and musical : the reader will have observed that the names which occur in these pages often consist entirely of liquids and vowels, that consonants are unknown at the end of a word, and that they are never double except at the beginning. Yet the idea of a syllabarium seems not to have occurred to the negroid mind. Finally, though the East African delights in the dance, and is an excellent timist—a thousand heels striking the ground simultaneously sound like one—his performance is as uncouth as perhaps was ever devised by man. He delights in a joke which manages him like a Neapolitan ; yet his efforts in wit are of the feeblest that can be conceived.

Though the general features of character correspond throughout the tribes in East Africa, there are also marked differences. The Wazaramo, for instance, are considered the most dangerous tribe on this line : caravans hurry through their lands, and hold themselves fortunate if a life be not lost, or if a few loads be not missing. Their neighbours, the Wasagara of the hills, were once peaceful and civil to travellers : the persecutions of the coast-people have rendered them morose and suspicious ; they now shun strangers, and, never knowing when they may be attacked, they live in a constant state of agitation, excitement, and alarm. After the

* For an account of musical instruments and dancing see Chapt. XIV.

Wazaramo, the tribes of Ugogo are considered the most noisy and troublesome, the most extortionate, quarrelsome, and violent on this route: nothing restrains these races from bloodshed and plunder but self-interest and fear of retribution. The Wanyamwezi bear the highest character for civilization, discipline, and industry. Intercourse with the coast, however, is speedily sapping the foundations of their superiority: the East African Expedition suffered more from thieving in this than in any other territory, and the Arabs now depend for existence there not upon prestige, but sufferance, in consideration of mutual commercial advantage. In proportion as the traveller advances into the interior, he finds the people less humane, or rather less human. The Wavinza, the Wajiji, and the other Lakist tribes, much resemble one another: they are extortionate, violent, and revengeful barbarians; no Wanyamwezi dares to travel alone through their territories, and small parties are ever in danger of destruction.

In dealing with the East African the traveller cannot do better than to follow the advice of Bacon—"Use savages justly and graciously, with sufficient guard nevertheless." They must be held as foes; and the prudent stranger will never put himself in their power, especially where life is concerned. The safety of a caravan will often depend upon the barbarian's fear of beginning the fray: if the onset once takes place, the numbers, the fierce looks, the violent gestures, and the confidence of the assailants upon their own ground, will probably prevail. When necessary, however, severity must be employed; leniency and forbearance are the vulnerable points of civilized policy, as they encourage attack by a suspicion of fear and weakness. In trading with, or even when dwelling amongst this people, all display of wealth must be avoided: a man who would purchase the smallest article avoids showing anything beyond its equivalent.

The ethnologist who compares this sketch with the far more favourable description of the Kafirs, a kindred race, given by travellers in South Africa, may suspect that only the darker shades of the picture are placed before the eye. But, as will appear in a future page, much of this moral degradation must be attributed to the working, through centuries, of the slave-trade: the tribes are no longer as nature made them; and from their connexion with strangers they have derived nothing but corruption. Though of savage and barbarous type, they have been varnished with the semi-civilization of trade and commerce, which sits ridiculously upon their minds as a rich garment would upon their persons.

Fetissism * is still the only faith known in East Africa. Its origin is easily explained by the aspect of the physical world, which has

* The word is derived from the Portuguese *feitiço*, "a doing,"—sc. of magic, by euphemism.

coloured the thoughts and has directed the belief of man : he reflects, in fact, the fantastical and monstrous character of the animal and vegetable productions around him. Nature, in these regions rarely sublime or beautiful, more often terrible and desolate, with the gloomy forest, the impervious jungle, the tangled hill, and the dread uniform waste tenanted by deadly inhabitants, arouses in his mind a sensation of utter feebleness, a vague and nameless awe. Untaught to recommend himself for protection to a Superior Being, he addresses himself directly to the objects of his reverence and awe : he prostrates himself before the sentiment within him, hoping to propitiate it as he would a fellow-man. The grand mysteries of life and death, unrevealed and unexplained to him, the want of a true interpretation of the admirable phenomena of creation, and the vagaries and misconceptions of his own degraded imagination, awaken in him ideas of horror, and people the invisible world with ghost and goblin, demon and evestrum, the incarnations, as it were, of his own childish fears. Deepened by the dread of destruction, ever strong in the barbarian breast, his terror causes him to look with suspicion upon all around him : "How," inquires the dying African, "can I alone be ill when others are well, unless I have been bewitched?" Hence the belief in magical and supernatural powers in man, which the stronger minded have turned to their own advantage.

Fetissism is the adoration, or rather the propitiation, of natural objects, animate and inanimate, to which certain mysterious influences are attributed. It admits neither god, nor angel, nor devil ; it ignores the very alphabet of revealed or traditional religion—a creation, a resurrection, a judgment-day, a soul or a spirit, a heaven or a hell. A modified practical atheism is thus the prominent feature of the superstition. Though instinctively conscious of a being above them, the Africans have as yet failed to grasp the idea : in their feeble minds it is an embryo rather than a conception—at the best a vague god, without personality, attributes, or providence. They call that being Mulungu—the Uhlunga of the Kafirs, and the Utika of the Hottentots. The term, however, may mean a ghost,* the firmament, or the sun ; a man will frequently call himself Mulungu, and even Mulungu Mbaya, the latter word signifying bad or wicked. In the language of the Wamasai "Ai," or with the article "Engai"—the Creator—is feminine, god and rain being synonymous.

The Fetiss superstition is African, but not confined to Africa. The faith of ancient Egypt, the earliest system of profane belief known to man, with its Triad denoting the various phases and powers of nature, was essentially fetissist ; whilst in the Syrian mind

* In the Kisawahili koma, or mulungu, is the disembodiment of a mshenzi, or heathen ; p'hepo, of a Moslem.

dawned at first the idea of "Melkart," a god of earth, and his Baalim, angels, vicegerents, or local deities. But generally the history of religions proves that when man, whether degraded from primal elevation or elevated from primal degradation, has progressed a step beyond atheism—the spiritual state of the lowest savagery—he advances to the modification called Fetissism, the condition of the infant mind of humanity. The Vedas contain no assertion of a Godhead; "such expressions as the love and fear of a God never occur in the sacred books of the Hindus." The ancient Persians were ignicolists, adoring etheriel fire. Confucius owned that he knew nothing about the gods, and therefore preferred saying as little as possible upon the subject. Men still without tradition or training confused the Demiurgus with his works, and ventured not to place the burden of creation, preservation, and destruction, upon a single deity. Slaves to the agencies of material nature, impressed by the splendours of the heavenly bodies, comforted by fire and light, persuaded by their familiarity with the habits of wild beasts that the brute creation and the human claimed a mysterious affinity, humbled by the terrors of elemental war, and benefited by hero and sage,

Quicquid humus, pelagus, colum mirabile gignunt,
Id duxere deos.

The barbarian worshipped these visible objects not as types, myths, divine emanations, or personifications of a deity: he adored them for themselves. The modern theory, the mode in which full-grown man explains away the follies of his childhood, making the interpretation precede the fable, fails when tested by experience. The Hindu, and, indeed, the ignorant Christian,* still adore the actual image of man and beast; it is unreasonable to suppose that they kneel before and worship with heart and soul its metaphysics; and an attempt to allegorize it, or to deprive it of its specific virtues, would be considered, as in ancient Greece and Rome, mere impiety.

By its essence, then, Fetissism is a rude and sensual superstition, the faith of abject fear, and of infant races that have not risen, and are, perhaps, incapable of rising to theism—the religion of love and the belief of the highest types of mankind. But old creeds die hard, and error, founded upon the instincts and feelings of human nature, borrows the coherence and uniformity of truth. That Fetissism is a belief common to man in the childhood of his spiritual life, may be proved by the frequent and extensive remains of the faith which the cretinism of the Hamitic race has perpetuated amongst them to the present day, still sprouting like tares even in

* The traveller in Southern Italy and Greece will often have remarked this phenomenon in the preference accorded to a particular statue or picture.

the cultivated field of revealed religion. The dread of ghosts, for instance, which is the mainstay of Fetissism, is not inculcated in any sacred book, yet the belief is not to be abolished.* Everywhere, too, their functions are the same: all are malevolent to the living, and they are seldom known to do good. The natural horror and fear of death which may be observed even in the lower animals has mostly caused the dead to be considered vindictive and destructive.

Some missionaries have detected in the habit, which prevails throughout Eastern and Western Africa, of burying slaves with the deceased, of carrying provisions to graves, and of lighting fires on cold nights near the last resting-places of the departed, a continuation of relations between the quick and the dead which points to a belief in a future state of existence. The wish is father to that thought: the doctrine of the soul, of immortality, belongs to a superior order of mind, to a more advanced stage of society. The belief, as its operations show, is in presentity, materialism, not in futurity, spiritualism. When the savage and the barbarian are asked what has become of the "old people" (their ancestors), over whose dust and ashes they perform obsequies,—tumulum circum volitat umbra,—these veritable secularists only smile and reply Wáme-kwisha, "they are ended." It proves their inferior organization. Even the North American aborigines, a race which Nature apparently disdains to preserve, decided that man hath a future, since even Indian corn is vivified and rises again. The East African has created of his fears a ghost which never attains the perfect form of a soul. This inferior development has prevented his rising to the social status of the Hindu, and other anciently civilized races, whom a life wholly wanting in purpose and occupation drove from the excitement necessary to stimulate the mind towards a hidden or mysterious future. These wild races seek otherwise than in their faith a something to agitate and to emotionize them.

The East African's Credenda—it has not arrived at the rank of a system, this vague and misty dawning of a creed—are based upon two main articles. The first is demonology, or, rather, the existence of Koma, the larvæ, ειδωλα, or evestra of the dead; the second is Uchawi, witchcraft or black magic, a corollary to the principal theorem. Few, and only the tribes adjacent to the maritime regions,

* Thus the Rakshasa of the Hindus is a disembodied spirit, doing evil to mankind; and the ghost of the prophet Samuel, raised by the familiar of the Witch of Endor, was the immortal part of a mortal being, still connected with earth, and capable of returning to it. Through the Manes, the Umbra, and the Evestrum of the ancients, the belief has descended to the moderns, as the household words ghost, goblin, and bogle, revenant, polter-geist, and spook, Duh, Dusha, and Dukh attest. Precisely similar to the African ghost-faith is the old Irish belief in Banshees, Pookas, and other evil entities; the corporeal frame of the dead forms other bodies, but the spirit hovers in the air, watching the destiny of friends, haunting houses, killing children, injuring cattle, and causing disease and destruction.

have derived from El Islam a faint conception of the one Supreme. There is no trace in this country of the ancient and modern animal-worship of Egypt and India, though travellers have asserted that vestiges of it exist amongst the kindred race of Kafirs. The African has no more of Sabæism than what belongs to the instinct of man: he has a reverence for the sun and moon, but he totally ignores star-worship. If questioned concerning his daily bread, he will point with a devotional aspect towards the light of day; and if asked what caused the death of his brother, will reply Jua or Rimwe, the sun. He has not, like the Kafir, a holiday at the epoch of new moon: like the Moslem, however, on first seeing it he raises and claps his hands in token of obeisance.* The Mzimu, or Fetiss hut,† is the first germ of a temple, and the idea is probably the same which suggested the Kurban or offering of the Arabs. It is found throughout the country, especially in Uzaramo, Unyamwezi, and Karagwah. It is in the shape of a dwarf house, 1 or 2 feet high, with a thatched roof, but without walls. Upon the ground, or suspended from the roof, are handfuls of grain and small pots full of beer, placed there to propitiate the ghosts, and to defend the crops from injury.

A prey to base passions and melancholy godless fears, the Fetissist, who peoples with malevolent beings the invisible world, animates material nature with evil influences. The rites of his dark and deadly superstition are all intended to avert evils from himself, by transferring them to others: hence the witchcraft and magic which flow naturally from his system of demonology. Men rarely die without the wife or children, the kindred or slaves, being accused of having compassed their destruction by "throwing the glamour over them;" and, as has been explained, the trial and the conviction are of the most arbitrary nature. Yet witchcraft is practised by thousands with the firmest convictions in their own powers; and though frightful tortures await the wizard and the witch who have been condemned for the destruction of chief or elder, the vindictiveness of the negro drives him readily to the malevolent practices of sorcery. As has happened in Europe and elsewhere, in the presence of torture and the instant advance of death, the sorcerer and sorceress will not only confess, but even boast of and believe in, their own criminality. "Verily I slew such a

* As has before been explained, Moslems, on this occasion, raise the hands, bless the hilal, or crescent, and supplicate Allah to make the month which it commences auspicious to them; it is probably one of the many relics of old Saburism converted to El Islam.

† Dr. Livingstone frequently alludes to the mzimu as containing "medicine for the barimo" (or ghosts). In chap. xxiii. he supposes that the head of an ox placed in one of these sheds is an object of worship; in E. Africa it would be an offering to procure increase of cattle.

Possibly this word may explain "the god Mozimo," worshipped, according to De Barros, by the people of "Benoumetapa."

one!—I brought about the disease of such another!”—these are their demented vaunts, the offspring of mental imbecility, stimulated by traditional hallucination.*

In this state of spiritual death there is, as may be imagined, but little of the fire of fanaticism: polemics are unknown as politics to them; their succedaneum for a god is not a jealous god. But upon the subjects of religious belief and revelation all men are equal: Davus becomes Oedipus, the fool is as the sage. What the “I” believes, that the “Thou” must acknowledge, under the pains and penalties of offending Self-esteem. Whilst the African’s faith is weakly catholic, he will not admit that other men are wiser on this point than himself. His mind, involved in the trammels of his superstition, and enchainèd by custom, is apparently incapable of receiving the impressions of El Islam. Yet he will fast like a Moslem, because doing something seems to raise him in the scale of creation. His Fetissism, unspiritualized by the philosophic Pantheism and Polytheism of Europe and Asia, has hitherto unfitted him for that belief which was readily accepted by the more Semitic maritime races, the Somal, the Wasawahili, and the Wamrima. To a certain extent, also, it has been the policy of the Arab to avoid proselytizing, which would lead to comparative equality: for sordid lucre the Moslem has left the souls of these Kafirs to eternal perdition. According to most doctors of the saving faith, an ardent proselytizer might convert by the sword whole tribes, though he might fail with individuals, who cannot break through the ties of society. The “Mombas Mission,” however, relying upon the powers of persuasion, unequivocally failed, and pronounced their flock to be “not behind the greatest infidels and scoffers of Europe: they blaspheme, in fact, like children.” With characteristic want of veneration they would say, “Your Lord is a bad master, for he does not cure his servants.” When an early convert died, the Wanyika at once decided that there is no Saviour, as he does not prevent the decease of a friend. The sentiment generally elicited by a discourse upon the subject of the existence of a Deity is a desire to see him, in order to revenge upon him the deaths of relatives, friends, and cattle.

Fetissism supplies an abundance of professionally holy men. The “Mfumo” is translated by the Arabs Bassar, a seer or clairvoyant. The Mchawi is the Sahhar, magician, or adept in the black art. Amongst the Wazegura and the Wasagara is the Mgonezi, a word Arabized into Rammal or Geomantist. He prac-

* The reader will bear in mind that the first outcry against the horrors of torturing for witchcraft was raised by the Jesuit Von Stein in 1631; that in 1794—only sixty-six years ago—the last of the witches was burnt in Europe; and that even in the present day, the arm of the law must defend against the indignation of the vulgar wretches suspected of sorcery.

tises the Miramoro, or divination and prediction of fray and famine, death and disease, by the relative position of small sticks, like spillikins, cast at random on the ground. The rain-maker of the Cape, common throughout these tribes, and extending far north of the Equator, is called in East Africa Mganga, in the plural Waganga: the Arabs term him Tabib, doctor or physician.

The Mganga, in the central regions termed Mfumo, may be considered as the embryo of a sacerdotal order. These drones, who swarm throughout the land, are of both sexes: the women, however, generally confine themselves to the medical part of the profession. The calling is hereditary; the eldest or the cleverest son begins his neoteric education at an early age, and succeeds to his father's functions. There is little mystery in the craft, and the magicians of Ubyamwezi have not refused to initiate some of the Arabs. The power of the Mganga is great: he is treated as a sultan, whose word is law, and as a giver of life and death. He is addressed by kingly title, and is permitted to wear the chieftain's badge, made of the base of a conical shell. He is also known by a number of small greasy and blackened gourds, filled with physic and magic, hanging round his waist, and by a little more of the usual grime—sanctity and dirt being connected in Africa as elsewhere. These men are sent from village to village, and receive as obventions and spiritual fees sheep and goats, cattle and provisions. Their persons, however, are not sacred, and for criminal acts they are punished like other malefactors. The greatest danger to them is an excess of fame. A celebrated magician rarely, if ever, dies a natural death: too much is expected from him, and a severe disappointment leads to consequences more violent than usual. The Arabs deride their pretensions, comparing them depreciatingly to the workers of Simiya or conjuration in their own country. They remark that the wizard can never produce rain in the dry, or avert it in the wet season. The many, however, who, to use a West African phrase, have "become black" from a long residence in the country, acquire a sneaking belief in them, and fear of their powers. The well-educated classes in Zanzibar consult these heathen, as the credulous of other Eastern countries go to the astrologer and geomantist, and in Europe to the clairvoyant and the Cartomantiste. In one point this proceeding is wise: the wizard rarely wants wits; and whatever he has heard secretly or openly will inevitably appear in the course of his divination.

It must not be supposed, however, that the Mganga is purely an impostor. To deceive others thoroughly a man must first deceive himself, otherwise he will be detected by the least discerning. This is the simple secret of so many notable successes, achieved in the most unpromising causes by self-reliance and en-

thusiasm, the parents of energy and consistence. These barbarians are more often sinned against by their own fears and fooleries of faith, than sinners against their fellow-men by fraud and falsehood.

The office of Uganga includes many duties. The same man is a physician by natural and supernatural means, a mystagogue or medicine man, a detector of sorcery, a rain-maker, a conjurer, an augur, and a prophet.

As a rule, all diseases, from a boil to marasmus senilis, are attributed by the Fetissist to P'hepo, Hubub, or Afflatus.* The Mganga is expected to heal the patient by expelling the possession. Like the evil spirit in the days of Saul, the unwelcome visitant must be charmed away by sweet music; the drums cause excitement, and violent exercise expels the ghost, as saltation nullifies in Italy the venom of the tarantula. The principal remedies are drumming, dancing, and drinking, till the auspicious moment arrives.† The ghost is then enticed from the body of the possessed into some inanimate article, which he will condescend to inhabit. This, technically called a Kiti, or stool, may be a certain kind of bead, two or more bits of wood bound together by a strip of snake's skin, a lion's or a leopard's claw, and other similar articles, worn round the head, the arm, the wrist, or the ankle. Paper is still considered great medicine by the Wasukuma and other tribes, who will barter valuable goods for a little bit: the great desideratum of the charm, in fact, appears to be its rarity, or the difficulty of obtaining it. Hence also the habit of driving nails into and hanging rags upon trees. The vegetable itself is not worshipped, as some Europeans who call it the "Devil's tree" have supposed: it is merely the place for the laying of ghosts, where by appending the Kiti most acceptable to the evestrum, he will be bound over to keep the peace with man. Several accidents in the town of Zanzibar have confirmed even the higher orders in their lurking superstition. Mr. Peters, an English merchant, annoyed by the slaves who came in numbers to hammer nails and to hang iron hoops and rags upon a "Devil's tree" in his court-yard, ordered it to be cut down, to the horror of all the black beholders, of whom no one would lay an axe to it. Within six months five persons died in that house—Mr. Peters, his two clerks, his cooper, and his ship's carpenter. This superstition will remind the traveller of the Indian Pipal (*Ficus religiosa*), in which fiends are supposed to roost, and suggest to the Orientalist

* The three words are synonymous. P'hepo, in Kisawahili, is the plural form of upopo (a zephyr), used singularly to signify a high wind, a whirlwind ("devil"), and an evil ghost, generally of a Moslem. Hubub, the Arabic translation, means literally the blowing of wind, and metaphorically "possession." The African phrase for a man possessed is "ana p'hepo," "he has a devil."

† Some Arabs submit to the degradation of dancing; others, notwithstanding the terrors of possession, would rather die than so disgrace themselves.

an explanation of the mysterious Moslem practices common from Western Africa to the farthest East. The hanging of rags upon trees by pilgrims and travellers is probably a relic of Arab Fetissism, derived in the days of ignorance from their congeners in East Africa. The custom has spread far and wide: even the Irish peasantry have been in the habit of suspending to the trees and bushes near their "holy wells" rags, halters, and spencels, in token of gratitude for their recovery, or that of their cattle.

There are other mystical means of restoring the sick to health; one specimen will suffice. Several little sticks, like matches, are daubed with ochre, and marks are made with them upon the patient's body. A charm is chanted, the sick possessed responds, and at the end of every stave an evil spirit flies from him, the signal being a stick cast by the Mganga upon the ground. Some unfortunates have as many as a dozen haunting ghosts, each of which has his distinct periapt: the Mganga demands a distinct honorarium for the several expulsions. Wherever danger is, fear will be; wherever fear is, charms and spells, exorcisms and talismans of portentous powers will be in demand; and wherever supernaturalisms are in requisition, men will be found, for a consideration, to supply them.

These strange rites are to be explained upon the principle which underlies thaumaturgy in general: they result from conviction in a gross mass of exaggerations heaped by ignorance, falsehood, and credulity, upon the slenderest foundation of fact—a fact doubtless solvable by the application of natural laws. The African temperament has strong susceptibilities, combined with what appears to be a weakness of brain, and great excitability of the nervous system, as is proved by the prevalence of epilepsy, convulsions, and hysterical disease. He is, therefore, peculiarly liable to the epidemical mania called "Phantasmata," which, according to history, has at times of great mental agitation and popular disturbance broken out in different parts of Europe, and which, even in this our day, forms the base-work of Revivals. Thus in Africa the objective existence of ghosts has become a tenet of belief. Stories that stagger the most sceptical are told concerning the phenomenon by respectable and not unlearned Arabs, who point to their fellow-countrymen as instances. Salim bin Rashid, a half-caste merchant, well known at Zanzibar, avers, and his companions bear witness to his words, that on one occasion, when travelling northwards from Unyanyembe, the possession occurred to himself. During the night two female slaves, his companions, of whom one was a child, fell, without apparent cause, into the fits which denote the approach of a spirit. Simultaneously the master became as one intoxicated; a dark mass, material, not spiritual, entered the tent, and he felt himself pulled and pushed by a number of black figures, whom he

had never before seen. He called aloud to his companions and slaves, who, vainly attempting to enter the tent, threw it down, and presently found him in a state of stupor, from which he did not recover till the morning. The same merchant circumstantially related, and called witnesses to prove, that a small slave-boy, who was produced on the occasion, had been frequently carried off by possession, even when confined in a windowless room, with a heavy door carefully bolted and padlocked. Next morning the victim was not found, although the chamber remained closed. A few days afterwards he was met in the jungle wandering absently like an idiot, and with speech too incoherent to explain what had happened to him. The Arabs of Oman, who subscribe readily to transformation,* deride these tales; those of African blood believe them.

The second, and, perhaps, the most profitable occupation of the Mganga, is the detection of Uchawi, or black magic. The fatuous style of conviction, and the horrors which, in the different regions, await those found guilty, have already been described, as far as description is possible. Amongst a people where the magician is a police detector, ordeals must be expected to thrive. The baga or kyapo of East Africa—the Arabs translate it El Halaf, or the Oath—is as cruel, absurd, and barbarous, as the red water of Ashanti, the venoms of Kasanji (Cassange), the muavi of the Banyai tribes of Monomotapa, the Tangina poison of the Malagash, the bitter water of the Jews, and the fire tests of mediaeval Europe. The people of Usumbara thrust a red hot hatchet into the mouth of the accused. Among the south-eastern tribes a heated iron spike, driven into some tender part of the person, is twice struck with a log of wood. The Wazaramo dip the hand into boiling water, the Waganda into seething oil; and the Wazegura prick the ear with the stiffest bristles of a gnu's tail. The Wakwafi have an ordeal of meat that chokes the guilty. The Wanyamwezi pound with water between two stones, and

* The transformation-belief, still so common in Maskat, Abyssinia, Somaliland, and the Cape, and anciently an almost universal superstition, is, curious to say, unknown amongst these E. African tribes. The Wahiao, lying between Kilwa and the Nyassa Lake, preserve, however, a remnant of the old creed in their conviction, that a malevolent magician can change a man after death into a lion, a leopard, or a hyena. On the E. Zambesi the people, according to Dr. Livingstone (chap. xxx.), believe that a chief may metamorphose himself into a lion, kill any one he chooses, and then return to the human form. About Tete (chap. xxxi.) the negroids believe that, "while persons are still living, they may enter into lions and alligators, and then return again to their own bodies." Travellers determined to find in Africa counterparts of European and Asiatic tenets, argue from this transformation a belief in the "transmigration of souls." They thus confuse material metamorphosis with a spiritual progress, which is assuredly not an emanation from the Hamitic mind. The Africans have hitherto not bewildered their brains with metaphysics, and, ignoring the idea of a soul, which appears to be rather a dogma of the Caucasian race, they necessarily ignore its immortality.

infuse, a poisonous bark called "Mwavi : " * it is first administered by the Mganga to a hen, which, for the nonce, represents the suspected. If, however, all parties be not satisfied with such trial, it is duly adhibited to the accused.

In East Africa, from Somaliland to the Cape, and throughout the interior amongst the negroids and negroes north as well as south of the Equator, the rain-maker or rain-doctor is a personage of consequence. The Mganga turns the hopes and fears of the people to his profit. A season of drought causes dearth, disease, and desolation amongst these improvident races, who therefore connect every strange phenomenon with the object of their desires, a copious wet monsoon. The enemy has medicines which disperse the clouds. The stranger who brings with him heavy showers is regarded as a being of good omen ; usually, however, the worst is expected from the novel portent ; he will, for instance, be accompanied and preceded by fertilizing rains, but the wells and springs will dry up after his departure, and the result will be drought or small-pox. These rumours, which may account for the *Aethiopian* stranger-sacrifices in the olden time, are still dangerous to travellers. The Mganga must remedy the evil. His spells are those of fetissists in general, the mystic use of something foul, poisonous, or difficult to procure, such as the album græcum of hyænas, snakes' fangs, or lions' hair ; these and similar articles are collected with considerable trouble by the young men of the tribe for the use of the rain-maker. But he is a weatherwise man, and rains in tropical lands are easily foreseen. Not unfrequently, however, he proves himself a false prophet ; and when all the resources of cunning fail he must fly for dear life from the victims of his delusion.

The Mganga is also a predictor and a soothsayer. He foretels the success or failure of commercial undertakings, of wars, and of kidnapping commandos ; he foresees famine and pestilence, and he suggests the means of averting calamities. He fixes also, before the commencement of any serious affair, fortunate conjunctions, without which a good issue cannot be expected. He directs expiatory offerings. His word is ever powerful to expedite or to delay the march of a caravan ; and in his quality of augur he considers the flight of birds and the cries of beasts, like his prototype of the same class in ancient Europe and in modern Asia.

The principal instrument of the Mganga's craft is one of the dirty little bugu or gourds which he wears in a bunch round his waist ; and the following is the usual programme when the oracle is to be consulted. The magician brings his implements in a bag

* Dr. Livingstone, chap. xxx., calls the ceremony "muavi ;" here the word is used as the name of the tree used in ordeal. Capt. Gamitto ('O Muata Cazembe,' chap. ii.) makes "o mnâve" the bark of a tree.

of matting ; his demeanour is serious as the occasion ; he is carefully greased, and his head is adorned with the diminutive antelope-horns fastened by a thong of leather above the forehead. He sits like a sultan upon a dwarf stool in front of the querist, and begins by extorting the highest possible offertory. No pay, no predict. Producing a small gourd, he shakes it solemnly ; the contents rattle like pebbles mixed with bits of metal, but the profane vulgar may not pollute the medicine with uninitiated eyes. The gourd is then placed upon the ground, and from the bag appears a novel implement, two black horns of the goat or the deer tied together with a thong of snake-skin garnished with a bunch of small iron bells. Holding one of these horns steady with the left hand, with the right he causes the other to perform sundry gyrations, directing the point alternately towards himself, the consulter, and the bystanders. During this operation the bells are violently shaken, the head is nodded, the body is swayed to and fro, whilst a stage whisper and a low murmur evidence the fact that inspiration is imminent. At length, fully primed with the spirit of prophecy, and connected by ecstasy with the ghosts of the dead, the Mganga lays aside the horns and bells, shakes the gourd, and inspects its contents with portentous looks and nods. Then the words of truth are poured into eager ears. Like the predictions of an English gipsy, a French Cartomantiste, an Indian Jogi, in fact all the prophetic tribe, the path of futurity is mainly one—dangers, difficulties, anxiety, disappointment, unexpected events which happen to every one, happy catastrophe. Presents to the Mganga and the slaughtering of particoloured hens play a conspicuous part amongst the means of attaining the wished-for end.

The magician, however, has other instruments besides the gourd. Some divine by the motion of berries floating in a cup full of water, which is placed upon a low stool surrounded by four tails of the zebra or the buffalo lashed to sticks planted upright in the ground. The Kasanda is a system of folding triangles not unlike those upon which plaything soldiers are mounted. Held in the right hand, it is thrown out, and the direction of the end points to the safe and auspicious route ; this is probably the very rudest display of prestidigitation. The shero is a bit of wood about the size of a man's hand, and not unlike a pair of bellows, with a dwarf handle, a projection like a nozzle, and in the circular centre a little hollow. This is filled with water, and a grain or fragment of wood, placed to float, gives an evil omen if it tends towards the sides, and favourable if it veers towards the handle or the nozzle. The Mganga generally carries about with him to announce his approach a kind of rattle called "sirje." This is a hollow gourd of pine-apple shape, pierced with various holes, prettily carved and half-filled with maize, grains, and pebbles ; the handle is a stick passed through its length and secured by cross-pins.

The Mganga has many minor duties. In elephant-hunts he must throw the first spear and endure the blame if the beast escapes. He marks ivory with spots disposed in lines and other figures, and thus enables it to reach the coast without let or hindrance. He loads the kirangozi or guide with charms and periaps to defend him from the malice which is ever directed towards a leading man, and sedulously forbids him to allow precedence even to the Mtongi, the commander and proprietor of the caravan. He aids his tribe by magical arts in wars, by catching a bee, reciting over it certain incantations, and loosing it in the direction of the foe, when the insect will instantly summon an army of its fellows and disperse a host, however numerous. This belief well illustrates the easy passage of the natural into the supernatural. The land being full of swarms, and man's body being wholly exposed, many a caravan has been dispersed like chaff before the wind by a bevy of swarming bees. Similarly in South Africa the magician kicks an anthill and starts wasps which put the enemy to flight. And in the books of the Hebrews we read that the hornet sent before the children of Israel against the Amorite was more terrible than sword or bow.*

The rite of circumcision in these regions appears a spontaneous and peculiarly African, not denoting as some have supposed a civilised and foreign origin, Jewish or Moslem. It is more generally practised near the coast, but it extends far into the interior. The Wazaramo, Wazegura, and Wasagara circumcise, the Wadoe do not; again, the Wanyamwezi and the Warori ignore the rite, whilst it is practised by the barbarous tribes of Wataturu and the Wagoma upon the Tanganyika Lake. The people of Ugogo circumcise their female as well as their male offspring, and the Wahumba effect it in a peculiar way. In East Africa the custom is sanitary, not religious or political. The rite is not accompanied by ceremonies, as is the "Bogwera" of the Bachwanas, and it is not performed by a peculiar order, nor is it attended by floggings as amongst the Kafirs, who like some of the Arabs make it a trial of manliness. It demarcates, however, the puerile and virile ages, and is held an indispensable preamble to matrimony. The invention attributed to Semiramis seems never to have occurred to the East African mind, although the habit of castrating cattle and poultry prevailed throughout the country before the arrival of the Arabs.

The origin of slavery in East Africa is veiled in the obscurity of the past; it is mentioned by the Periplus† as an institution of

* Joshua, chap. xxiv.

† Chap. iii. *εποιεῖν εἰσειν*, but not south of Opone (Ras Hafun?). In chap. xvii. the exports (from Rhapta—Mbuamaji, near the delta of the Rufiji River—or Kilwa? where the size of the men is particularly mentioned, and may still be remarked amongst slaves of the Wahao tribe) are ivory, rhinoceros (horn and hide?), and tortoise-shell.

the land, and probably it was the result of the ancient trade with southern Arabia. At present it is almost universal : with the exceptions of the Wahinda, the Watosi, and the Wagogo, all the tribes from the eastern equatorial coast to Ujiji and the regions lying westward of the Tanganyika Lake may be called slave-races. An Arab, a Msawahili, and even a bondsman from Zanzibar, is everywhere called Murungwana or freeman. Yet in many parts of the country the tribes are rather slave-importers than exporters. Although they kidnap others, they will not sell their fellows, except when convicted of crime—theft, magic, murder, or cutting the upper teeth before the lower. In times of necessity, however, a man will part with his parents, wives, and children, and when they fail he will sell himself without shame. As has been observed, amongst many tribes the uncle has a right to dispose of his nephews and nieces.

Justice requires the confession that the horrors of slave-driving rarely meet the eye in East Africa. Some merchants chain or cord together their gangs for safer transport through regions where desertion is at a premium. Usually, however, they trust rather to soft words and kind treatment; the fat lazy slave is often seen stretched at ease in the shade, whilst the master toils in the sun and wind. The "property" is well fed and little worked, whereas the porter, belonging to none but himself, is left without hesitation to starve upon the road-side. The relationship is rather that of patron and client than of lord and bondsman; the slave is addressed as Ndugu-yango, "my brother," and he is seldom provoked by hard words or stripes. In fact, the essence of slavery, compulsory unpaid labour, is perhaps more prevalent in independent India than in East Africa ; moreover there is no adscriptus glebae, as in the horrid thraldom of ancient Malabar. To this general rule there are terrible exceptions, as might be expected amongst a people with scant regard for human life. The Kirangozi or guide attached to the Expedition on return from Ujiji had loitered behind for some days because his slave girl was too footsore to walk. When tired of waiting he cut off her head, for fear lest she should become gratis another man's property.

In East Africa there are two forms of this traffic, the export and the internal trade. For the former slaves are collected like ivories throughout the length and breadth of the land. They are driven down from the principal dépôts, the island of Kasenge, Ujiji, Unyanyembe, and Zungomero to the coast by the Arab and Wasawahili merchants, who afterwards sell them in retail at the great mart, Zanzibar. The internal trade is carried on between tribe and tribe, and therefore will long endure.

The practice of slavery in East Africa, besides demoralizing and brutalizing the race, leads to the results which effectually bar

increase of population and progress towards civilisation. These are commandos, or border wars, and intestine confusion.

All African wars, it has been remarked, are for one of two objects, cattle-lifting or kidnapping. Some of the pastoral tribes—as the Wamasai, the Wakwafi, the Watuta, and the Warori—assert the theory that none but themselves have a right to possess herds, and that they received the gift directly from their ancestor who created cattle; in practice, they covet the animals for the purpose of a general gorge. Slaves, however, are much more frequently the end and aim of feud and foray. The process of kidnapping, an inveterate custom in these lands, is in every way agreeable to the mind of the man-hunter. A “*multis utile bellum*,” it combines the pleasing hazards of the chase with the exercise of cunning and courage; the battue brings martial glory and solid profit, and preserves the barbarian from the listlessness of life without purpose. Thus men date from foray to foray, and pass their days in an interminable blood-feud and border war. A poor and powerful chief will not allow his neighbours to rest wealthier than himself; a quarrel is soon found, the stronger attacks the weaker, hunts and harries his cattle, burns his villages, carries off his subjects and sells them to the first passing caravan. The inhabitants of the land have thus become wolves to one another; their only ambition is to dispeople and destroy, and the blow thus dealt to a thinly populated country strikes at the very root of progress and prosperity.

As detrimental to the public interests as the border wars is the intestine confusion caused by the slave trade. It perpetuates the vile belief in Uchawi or black magic: when captives are in demand, the criminal's relations are sold into slavery. It affords a scope for the tyranny of a chief, who if powerful enough will enrich himself by vending his subjects in wholesale and retail. By weakening the tie of family, it acts with deadly effect in preventing the increase of the race.

On the coast and in the island of Zanzibar the slaves are of two kinds—the Muwallid or domestic, born in captivity, and the wild slave imported from the interior.

In the former case the slave is treated as one of the family, because the master's comfort depends upon the man being contented; often also his sister occupies the dignified position of concubine to the head of the house. These slaves vary greatly in conduct. The most tractable are those belonging to the Diwans and the Wasawahili generally, who treat them with the utmost harshness and contempt. The Arabs spoil them by a kinder usage; few employ the stick, the salib, or cross—a forked pole to which the neck and ankles are lashed—and the makantale or stocks, for fear of desertion. Yet the slave if dissatisfied silently leaves

the house, lets himself to another master, and returns after perhaps two years' absence as if nothing had occurred. Thus he combines the advantages of freedom and slavery. Moreover, it is a proverb among the Arabs that a slave must desert once in his life, and he does so the more readily as he betters his condition by so doing. The worst in all points are those belonging to the Banyans, the Indians, and other European subjects ; they know their right to emancipation, and consult only their own interests and inclinations. The Muwallid or domestic slave is also used like the Pombeiro of West Africa. From Unyamwezi and Ujiji he is sent to traffic in the more dangerous regions—the master meanwhile dwelling amongst his fellow countrymen in some comfortable tembe. This proceeding has greatly injured the commerce of the interior and necessitates yearly lengthening journeys. The slave intrusted with cloth and beads suddenly becomes a great man, he is lavish in supporting the dignity of a fundi or fattore, and, consulting nothing but his own convenience, he will loiter for six months at a place where he has been sent for a week. Thus it is that ivory sold in Unyamwezi but a dozen years ago at 10 lbs. for 1 lb. of beads now fetches nearly weight for weight. And this is a continually increasing evil. No caravan, however, can safely traverse the interior without an escort of slave-musketeers. They never part with their weapons, even when passing from house to house, holding that their lives depend upon their arms ; they beg, borrow, or steal powder and ball ; in fact, they are seldom found unready. They will carry nothing but the lightest gear, the master's writing-case, bed, or praying mat ; to load them heavily would be to ensure desertion. Contrary to the practice of the free porter, they invariably steal when they run away ; they are also troublesome about food, and they presume upon their weapons to take liberties with the liquor and the women of the heathen.

The imported slaves again are of two different classes. Children are preferred to adults ; they are Islamized and educated so as to resemble the Muwallid, though they are even somewhat less tame. Full-grown serfs are bought for predial purposes ; they continue indocile, and alter little by domestication. When not used by the master they are left to plunder or to let themselves out for food and raiment, and when dead they are cast into the sea or into the nearest pit. These men are the scourge of society ; no one is safe from their violence ; and to preserve a garden or an orchard from the depredations of the half-starved wretches, a guard of musketeers would be required. They are never armed, yet, as has been recounted, they have caused at Zanzibar servile wars, deadly and lasting as those of ancient Rome.

Arabs declare that the barbarians are improved by captivity—a partial theory open to doubt. The *servum pecus* retain in

thraldom that wildness and obstinacy which distinguish the people and the lower animals of their native lands ; they are trapped, but not tamed ; they become captives, but not civilised. However trained, they are probably the worst servants in the world ; a slave-household is a model of discomfort. The wretches take a trouble and display an ingenuity in opposition and disobedience, in perversity, annoyance, and villainy, which rightly directed would make them invaluable. The old definition of a slave still holds good—"an animal that eats as much and does as little as possible." Clumsy and unhandy, dirty and careless, he will never labour unless ordered to do so, and so futile is his nature that even the inducement of the stick cannot compel him to continue his exertions ; a whole gang will barely do the work of a single servant. He "has no end," to use the Arab phrase : that is to say, however well he may begin, he will presently tire of his task ; he does not and apparently he will not learn ; his first impulse, like that of an ass, is not to obey ; he then thinks of obeying ; and if fear preponderate he finally may obey. He must deceive, for fraud and foxship are his force ; when detected in some prodigious act of rascality, he pathetically pleads "Am I not a slave?" So wonderous are his laziness and hate of exertion, that despite a high development of love of life he often appears the most reckless of mortals. He will run away from the semblance of danger ; yet on a journey he will tie his pipe to a leaky keg of gunpowder, and smoke it in that position rather than take the trouble to undo it. A slave belonging to Musa, the Indian merchant at Kazeh, unwilling to rise and fetch a pipe, opened the pan of his musket, filled it with tobacco and fire, and beginning to inhale it from the muzzle blew out his brains. Growing confident and impudent from the knowledge of how far he may safely go, the slave presumes to the utmost. He steals instinctively, like a magpie : a case is quoted in which the gold spangles were stripped from an officer's sword-belt whilst dining with the Prince of Zanzibar. The slave is almost always half-naked ; whatever clothes he obtains from the master are pawned or sold in the bazar ; hence he must pilfer and plunder almost openly for the means of gratifying his lowest propensities, drinking and intrigue. He seems to acquire from captivity a greater capacity for debauchery than even in his native wilds ; he has learned irregularities unknown to his savage state : it is the brutishness of negroid nature brought out by the cheap and readily attainable pleasures of semi-civilisation. Whenever on moonlight nights the tap of the tomtom responds to the vile squeaking of the fife, it is impossible to keep either a male or female slave within doors. All rendezvous at the place, and, having howled and danced themselves into happiness, conclude with a singularly disorderly scene. In the town of Zanzibar these

"Ngoma" or dances were prohibited for moral reasons by the late Sayid. The attachment of a slave to his master is merely a development of selfishness; it is a greater insult to abuse the Ahbab (patron), than, according to Eastern fashion, the father and mother, the wife and sister. No slave-owner, however, praises a slave or relies upon his fidelity. The common expression is, "There is no good in the bondsman."

Like the Somal, a merry and light-hearted race in foreign countries, but rendered gloomy and melancholy by the state of affairs at home, the negroid slaves greatly improve by exportation: they lose much of the surliness and violence which distinguish them at Zanzibar, and are disciplined into a kind of respect for superiors. Thus "Seedy Mubarak" is a prime favourite on board an Indian steamer; he has also strength and courage enough to make himself respected. But "Seedy Mubarak" has tasted the intoxicating draught of liberty, he is in high good humour with himself and with all around him, he is a slave merely in origin, he has been adopted into the great family of free men, and with it he has identified all his interests. Eastern history preserves instances of the valour and faithfulness of bondsmen, as the annals of the West are fond of recording the virtues of dogs. Yet all the more civilised races have a gird at the negro. In the present day the Persians and other Asiatics are careful, when bound on distant or dangerous journeys, to mix white servants with black slaves; they hold the African to be full of strange childish caprices, and to be ever at heart a treacherous and bloodthirsty barbarian. Like the "bush-negroes" of Surinam, once so dangerous to the Dutch, the runaway slaves from Zanzibar have formed a kind of East African Liberia, between Mount Yombo and the Shimba section of the Eastern Ghauts. They have endangered the direct caravan-road from Mombasah to Usumbara; and though trespassing upon the territory of the Mwasagnombe, a sub-clan of the Wadigo, and claimed as subjects by Abdullah, the son of Sultan Kimwere, they have gallantly held their ground. According to the Arabs there is another servile republic about Gulwen, near Brava. Travellers speak with horror of the rudeness, violence, and cruelty of these self-emancipated slaves; they are said to be more dangerous even than the Somal, who for wanton mischief and malice can be compared with nothing but the naughtiest schoolboys in England.

The serviles at Zanzibar have played their Arab masters some notable tricks. Many a severe lord has perished by the hand of a slave. Several have lost their eyes by the dagger's point during sleep. Curious tales are told of ingenious servile conspiracy. Mohammed bin Sayf, a Zanzibar Arab, remarkable for household discipline, was brought to grief by Kombo his slave, who stole a basket of nutmegs from the Prince, and, hiding them in his master's

house, denounced him of theft. Fahl bin Nasr, a travelling merchant, when passing through Ugogo, nearly lost his life in consequence of a slave having privily informed the people that his patroon had been killing crocodiles and preserving their fat for poison. In both these cases the slaves were not punished ; they had acted, it was believed, according to the true instincts of servile nature, and chastisement would have caused desertion, not improvement.

As regards the female slaves, the less said about them from regard to the sex the better : they are as deficient in honour as in honesty, in modesty and decorum as in grace and beauty. No man, even an Arab, deems the mother of his children chaste, or believes in the legitimacy of his progeny till proved.

Extensive inquiries into the subject lead to a conviction that it is impossible to offer any average of the price of slaves. Yet the question is of importance, as only the immense profit causes men thus to overlook all considerations of humanity. A few general rules may be safely given. There is no article, even horse-flesh, that varies so much in market-value as the human commodity : the absolute worth is small compared with the wants of the seller and the requirements and the means of the purchaser. The extremes range from six feet of unbleached domestics or a few pounds of grain in time of famine, and 70 dollars, equal to 15*l.* The slaves are cheapest in the interior, on account of the frequency of desertion : about Unyamwezi they are dearer, and most expensive in the island of Zanzibar. At the latter place during the last few years they have doubled in price : according to the Arabs, who regard the abolition of slavery with feelings of horror, this increase results from the impediments thrown in the way by the English ; a more probable explanation may be found in the greater cheapness of money. At Zanzibar the price of a boy under puberty is from 15 to 30 dollars. A youth till the age of 15 is worth a little less. A man in the prime of life, from 25 to 40, fetches from 13 to 20 dollars, after that age he may be bought for 10 to 13. Educated slaves, fitted for the work of factors, are sold for 25 to 70 dollars, and at fancy prices. The price of females is everywhere about one-third higher than that of males. At Zanzibar the ushur or custom-dues vary according to the race of the slave : the Wahiao, Wangindo, and other serviles imported from Kilwa, pay 1 dollar per head, from the Mrima or maritime regions 2 dollars, and from Unyamwezi, Ujiji, and the rest of the interior 3 dollars. At the central dépôt, Unyanyembe, where slaves are considered neither cheap nor dear, the value of a boy ranges between 8 and 10 doti or double cloths ; a youth from 9 to 11 ; a man in prime, from 5 to 10 ; and past his prime from 4 to 6. In some parts of the interior men are dearer than children under puberty. In the

cheapest places, as in Karagwah and Urori, a boy costs 3 shukkah of cloth, and 3 fundo or 30 strings of coral beads; a youth from 10 to 15 fundo; a man in prime from 8 to 10; and no one will purchase an old man.* These general notes must not, however, be applied to particular tribes: as with ivory and other valuable commodities, the amount and the description of the circulating medium vary at almost every march.

It was asserted by the late Colonel Hamerton, whose local knowledge was extensive, that the average of yearly import into the island of Zanzibar was 14,000 head of slaves, the extremes being 9000 and 20,000. The loss by mortality and desertion is 30 per cent. per annum; thus, the whole gang must be renewed between the third and fourth year.

By a stretch of power slavery might readily be abolished in the island of Zanzibar, and in due time, after the first confusion, the measure would doubtless be found as profitable as it is now unpalatable to the landed proprietors, and to the commercial body. A "sentimental squadron," like the West African, would easily, by means of steam, prevent any regular exportation to the Asiatic continent. But these measures would deal only with effects, leaving the causes in full vigour; they would strike at the bole and branches, the root retaining sufficient vitality to resume its functions as soon as relieved of the pressure from without. Neither treaty nor fleet would avail permanently to arrest the course of slavery upon the seaboard, much less would it act in the far realms of the interior. At present the African will not work: the purchase of predial slaves to till and harvest for him is the great aim of his life. When a more extensive intercourse with the maritime regions shall beget wants which compel the individual, now contented with doing nothing and having nothing, to that personal exertion and that mutual dependency which render serfdom a moral impossibility in the more advanced stages of human society,—when man, now valueless except to himself, shall become more precious by his labour than by his sale, in fact an article so expensive that strangers cannot afford to buy him,—then we may expect to witness the extinction of the evil. Thus, and thus only, can "Rachel, still weeping for her children, in the evening of her days, be made happy."

Meanwhile the philanthropist who after sowing the good seed has sense and patience to consign the gathering of the crop to posterity, will hear with pleasure that the extinction of slavery would be hailed with delight by the great mass throughout the length and breadth of Eastern Africa. This people, "robbed and

* The reader will bear in mind that the shukkah or 6-foot length of American domestics is worth on the coast 25 cents; in Unyamwezi, 75 cents; and in Ujiji, 1 dollar. The beads alluded to above are the samesame, or red coral, of which 3 fundo (= 30 khete or strings) are equivalent to the shukkah.

spoiled" by their oppressors, who are legionary, call themselves "the meat," and the slave-dealers "the knife :" they hate and fear the practice, but they lack unanimity to free their necks from the yoke. Africa still "lies in her blood," but the progress of human society, and the straighter bonds which unite man with man, shall eventually rescue her from her old pitiable fate.

The several tribes in East Africa present two forms of government, the despotic and the semi-monarchical.

In the despotic races, the Wakilima or mountaineers of Chhaga for instance, the subjects are reduced to the lowest state of servility. All, except the magicians and the councillors, are "Wasoro"—soldiers and slaves to the sultan,* mangi, or sovereign. All male children taken from their mothers are made to live together, and are trained to the royal service, to guarding the palace, to tilling the fields, and to keeping the watercourses in order. The despot is approached with fear and trembling; subjects of both sexes must stand at a distance and repeatedly clap their palms together before venturing to address him; women always bend the right knee to the earth, and the chief acknowledges the salutation with a nod. At times the elders and even the women inquire of the ruler what they can do to please him: he points to a plot of ground which he wishes to be cleared, and this corvée is the more carefully performed as he fines them in a bullock if a weed be left unplucked. Females captured in war are sold by the king, and the children are kept to swell the number of his slaves. None of the Wasoro may marry without express permission. The king has unlimited power of life and death, which he exercises without squeamishness, and a general right of sale over his subjects: in some tribes, as those of Karagwah, Uganda, and Unyoro, he is almost worshipped. It is a capital offence to assume the name of a sultan; even a stranger so doing would be subjected to fines and other penalties. The king lives in a manner of barbarous state. He has large villages crowded with his families and slaves. He never issues from his abode without an armed mob, and he disdains to visit even the wealthiest Arabs. The monarchical tribes are legitimists of the good old school, disdaining a "novus homo," and the consciousness of power invests their princes with a certain dignity and majesty of demeanour. As has been mentioned, some of the sultans whose

* The reader will bear in mind that the word "sultan" is the Arabic term applied generically by traders to all the reguli and roitelets, the chiefs and headmen, whose titles vary in every region. In Uzaramo the sultan is called p'hazi; in Khutu, p'hazi or mundewa; in Usagara, mundewa; in Ugogo, ntéme; in Unyamwezi, mwami; in Ujiji and Karagwah, nkama. "Wazir" is similarly used by the Arabs for the principal councillor or minister, whose African name in the several tribes is mwene goha, mbáhá, mzigirá, mgáwe, mhángó, and muhindá. The elders are called throughout the country Wagosi and Wányápára: they form the council of the chief.

rule has the greatest prestige appear, from physical peculiarities, to be of a foreign and a nobler origin.

In the semi-monarchical tribes, as the Wanyamwezi, the power of the Sultan depends mainly upon his wealth, importance, and personal qualifications for the task of rule. A chief enabled to carry out a "fist-right" policy will raise himself to the rank of a despot and will slay and sell his subjects without mercy. Though surrounded by a council varying from two to a score of chiefs and elders, who are often related to or connected with him, and who, like the Arab shaykhs, presume as much as possible in ordering this and in forbidding that, he can disregard and slight them. More often, however, his authority is circumscribed by a rude balance of power; the chiefs around him can probably bring as many warriors into the field as he can. When weak, the Sultan has little more authority than the patell of an Indian village or the shaykh of a Bedouin tribe. Yet even when the chief cannot command in his own clan, he is an important personage to travelling merchants and strangers. He can cause a quarrel, an avanie, or an assassination, and he can quiet brawls even when his people have been injured; he can open a road by providing porters, and he can bar a path by deterring a caravan from proceeding, or by stopping the sale of provisions. Thus it is easy to travel amongst races whose chiefs are well disposed to foreigners, whilst the utmost circumspection becomes necessary when the headmen are grasping and inhospitable. Upon the whole, the chiefs are wise enough to encourage the visits of traders.

A purely republican form of government is unknown in East Africa. The Wasagara, it is true, choose their chief like the Banyai of "Monomotapa," but, once elected, he becomes a monarch. Loyalty—or, to reduce it to its elements, veneration for the divinity which hedges in a king—is a sentiment innate in the African mind. Man, however, in these regions is not a political animal. He has a certain instinctive regard for his chief and a respect for his elders, but he ignores the blessings of duly limited independence and the natural classification of humanity into superior and inferior. He acknowledges no higher and lower social strata; honours—the cheap pay of nations—are unknown; his barbarism forbids the existence of a learned oligarchy, of an educated community, or of a church and state,—the soul and body of society. Man being equal to man, force being the only law and self the sole consideration, mutual jealousy prevents united efforts and deadens patriotic spirit. No one cares for the public good; the welfare of the general must yield to the most contemptible individual interests: civil order and security are therefore unknown, and foreign relations cannot exist.

In the lowest tribes the chieftain is a mere nonentity : "a sultan," as the Arabs say, "within his own walls." His subjects will boast, like the Somal, that he is "tanquam unus ex nobis," and they are so sensible of restraint that "girdles and garters would be to them bonds and shackles" metaphorically as well as literally. The position of these sultans is about equal to that of the diwans of the Mrima ; their dignity is confined to sitting upon a dwarf three-legged stool, to wearing more brass wire than beads, and to possessing clothes a little better than those of their subjects. The "regulus" must make a return-present to strangers after receiving their offerings, and in some cases must begin with gifts. He must listen to the words of his councillors and elders, who, being without salary, claim a portion of the presents and treasure-trove, interfere on all occasions of blackmail, fines, and penalties, demand from petitioners gifts and bribes to secure interest, and exert great influence over the populace.

Legitimacy is the rule throughout the land, and the son, usually the eldest, succeeds to the father, except amongst the Wasukuma of N. Unyamwezi, where the line of descent is by the sister's son—the "surer side" *—for the normal reason, to secure some of the blood royal for ruling. Even the widows of the deceased become the property of the successor. This truly African custom prevails also amongst the Bachwanas, and presents another of those curious points of resemblance between the Hamite and Semite races which have induced modern ethnologists to derive the Arab from Africa.† The curious practice amongst the Wan-yamwezi of devising property to illegitimate children is not carried out in the succession to power. Where there are many sons, all, as might be expected, equally aspire to govern ; sometimes, however, of two brothers one will consent to hold authority under the other. In several tribes, especially in those of Usukuma, the widow of a chief succeeds to his dignity in default of issue.

Punishments are simple in East Africa. The sar, vendetta or blood-feud, and its corollary the diyat or weregeld, exist in germ, unreduced, as amongst the more civilized Arabs, to an artful and intricate system. But these customs are founded, unlike ours, upon barbarous human nature. Instinct prompts a man to slay the slayer of his kith and kin ; the offence is against the individual, not the government or society. He must reason to persuade himself that the crime, being committed against the law, should be left to the law for notice ; he wants revenge, and he cares nought for punishment or example for the prevention of crime.

* The Arabs, on the contrary, have little affection for their sisters' children, although they love the offspring of a brother as their own sons.

† The custom called nikah el mukt, or the hated marriage, namely of a man with his stepmother or father's widow, was universally practised by the Arab tribes in the days of ignorance preceding the advent of Mohammed.

The Sultan encourages the payment of bloodmoney to the relatives of the deceased,—or, if powerful enough, claims it himself,—rather than that one murder should lead to another, and eventually to a chronic state of bloodshed and confusion. Thus, in some tribes the individual revenges himself, and in others he commits his cause to his agent the chief. Here he takes an equivalent in cattle for the blood of a brother or the loss of a wife ; there he visits the erring party with condign punishment. The result of such deficiency of standard is a want of graduation in severity ; a thief is sometimes speared and beheaded or sold into slavery after all his property has been extorted by the chief, the councillors, and the elders, whilst a murderer is perhaps only fined.

The land in East Africa is everywhere allodial ; it does not belong to the ruler, nor has the dawn of the feudal system yet arisen there. A migratory tribe gives up its rights to the soil, contrary to the mortmain system of the Arab Bedouins, and, if it would return, it must return by force. The Sultan, however, exacts a fee from all immigrants settling in his territory.

The sources of revenue in East Africa are uncertain, desultory, and complicated. The agricultural tribes pay yearly a small percentage of grain ; this, however, is the office of the women, who are expert in fraud. Neither sowing nor harvest can take place without the chief's permission, and the issue of his order is regulated by his own interests. Amongst the hunting tribes, slain elephants become the hunter's property, but the Sultan claims as treasure-trove a tusk of any animal found wounded or dead in his dominions, and in all cases the spoils of dead lions are crown property. The flesh of game is distributed amongst the elders and the ruling family, who also demand a share of the cloth or beads purchased by means of the ivory from caravans. Some have abditaria and considerable stores of the articles most valued by barbarians. Throughout the slave-paths the chiefs have learned to raise revenue from the slave-drivers, who thus bribe them to forbear from robbery. But whilst the stronger require large gifts without return, the weaker make trifling presents, generally of cattle or provisions, and expect many times their value in brass wire, cloth, and beads. The stranger may refuse these offerings : it is, however, contrary to custom, and as long as he can afford it he should submit to the imposition. Fines and fines are alarmingly frequent. If the monsoon-rains delay, the chief summons a Mganga to fix upon the obstructor ; he is at once slain, and his property is duly escheated. The Sultan claims the goods and chattels of all felons and executed criminals, even in the case of a servant put to death by his master. In the more republican tribes the chief lives by the sweat of his slaves. Briefly, East Africa presents an instructive study of human society in its first stage after infancy.

CHAPTER XIV.

VILLAGE LIFE IN EAST AFRICA.

In this chapter it is proposed to give a short account of the East African's day, showing his occupations, his pleasures, and his industry. The scene is more patent to the traveller's eye in these lands than in the semi-civilized regions of Asia, where men rarely admit strangers to hospitality and usually exclude them from society. In Unyamwezi and other settled regions caravans march into every village as a right, billet themselves, if strong enough, in the most comfortable lodgings, and mix freely with the inhabitants. The chiefs and elders collect to beg presents and to hear news. The young amuse themselves with staring and deriding, and the women display none of that retiring modesty in public which distinguishes the sex in Asia.

The assertion may startle the reader's preconceived opinions concerning the savage state of Central Africa and the wretched condition of the slave races, negroid and negro; but it is not less true that the African is in these regions superior in comforts, better dressed, fed, and lodged, and less worked than the unhappy ryot of British India. His condition may, indeed, be compared advantageously, where the slave-trade is slack, with that of the peasantry in some of the richest of European countries.

The African rises with the dawn from his couch of cow's hide. The hut is cool and comfortable during the day, but the closed door impeding ventilation at night causes it to be close and disagreeable. The hour before sunrise being the coldest time, he usually kindles a fire, and addresses himself to his constant companion the pipe. When the sun becomes sufficiently powerful, he removes the reed-screen from the entrance, and issues forth to bask in the morning beams. The villages are populous, and the houses touching one another enable the occupants, when squatting outside and fronting the central square, to chat and chatter without moving. About 7 A.M., when the dew has partially disappeared from the grass, the elder boys drive the flocks and herds to pasture with loud shouts and sounding applications of the quarter-staff. They return only when the sun is sinking behind the western horizon. At 8 P.M. those who have provisions at home enter the hut to refection with ugali or holcus-porridge; those who have not, join a friend. Pombe, when procurable, is drunk from the earliest dawn.

After breaking his fast the African repairs, pipe in hand, to the Iwanzâ—the village "public," previously described. Here, in the society of his own sex, he will spend the greater part of the day,

talking and laughing, smoking, or torpid with sleep. Occasionally he sits down to play. As with barbarians generally, gambling in him is a passion. The normal game is our "heads and tails," its implement a flat stone, a rough circle of tin, or the bottom of a broken pot. The more civilized have learned the "bao" of the coast, a kind of "tables," with counters and cups hollowed in a solid plank. Many of the Wanyamwezi have been compelled by this indulgence to sell themselves into slavery: after playing through their property, they even stake their mothers against a cow or a pair of goats. As may be imagined, squabbles are perpetual; they are almost always, however, settled amongst fellow-villagers with bloodless weapons. Others, instead of gambling, seek some employment which, working the hands and leaving the rest of the body and the mind at ease, is ever a favourite with the Asiatic and the African; they whittle wood, pierce and wire their pipe-sticks—an art in which all are adepts—shave one another's heads, pluck out their beards, eyebrows, and eyelashes, and prepare and polish their weapons.

At about 1 P.M. the African, unless otherwise employed, returns to his hut to eat the most substantial and the last meal of the day, which has been cooked by his women. Eminently gregarious, however, he often prefers the Iwánzá as a dining-room, where his male children, relatives, and friends meet during the most important hour of the twenty-four. With the savage and the barbarian food is the all-in-all of life: food is his thought by day, food is his dream by night. The civilized European, who never knows hunger or thirst without the instant means of gratifying every whim of appetite, can hardly conceive the extent to which his wild brother is swayed by the great Gaster; he can scarcely comprehend the state of mental absorption in which the ravenous human animal broods over the carcase of an old goat, the delight which he takes in superintending every part of the cooking process, and the jealous eye with which he regards all who live better than himself.

The principal articles of diet are fish and flesh, grain and vegetables; the luxuries are milk and butter, honey, and a few fruits, as bananas and Guinea-palm dates; and the inebriants are pombe millet beer, toddy, and mawa or plantain-wine.

Fish is found in the lakes and in the many rivers of this well-watered land; it is despised by those who can afford flesh, but it is a "godsend" to travellers, to slaves, and to the poor. Meat is the diet most prized; it is, however, a luxury beyond the reach of peasantry, except when they can pick up the orts of the chiefs. The Arabs assert that in these lands vegetables cause heartburn and acidity, and that animal food is the most digestible. The Africans seem to have made the same discovery:

a man who can afford it almost confines himself to flesh, and he considers fat the essential element of good living. The crave for meat is satisfied by eating almost every description of living thing, clean or unclean; as a rule, however, the East African prefers beef, which strangers find flatulent and heating. Like most people, they reject game when they can command the flesh of tame beasts. Next to the bullock the goat is preferred in the interior; as indeed it is by the Arabs of Zanzibar island, whereas those of Oman and of Western Arabia leave it to the Bedouins. In this part of Africa the cheapest and vilest meat is mutton, and its appearance—pale, soft, and braxy—justifies the prejudice against it. Of late years it has become the fashion to eat poultry and pigeons; eggs, however, are still avoided.* Of wild flesh, the favourite is that of the zebra; it is smoked or jerked, despite which it retains a most savoury flavour. Of the antelopes a few are deliciously tender and succulent; the greater part are black, coarse, and indigestible. One of the inducements for an African to travel is to afford himself more meat than at home. His fondness for the article conquers at times even his habitual improvidence. He preserves it by placing large lumps upon a little platform of green reeds, erected upon uprights about 18 inches high, and by smoking it with a slow fire. Thus prepared, and with the addition of a little salt, the provision will last for several days, and the porters will not object to increase their loads by three or four pounds of the article, disposed upon a long stick like gigantic kababs. They also jerk their stores by exposing the meat upon a rope, or spread upon a flat stone, for two or three days in the sun; it loses a considerable portion of nutriment, but it packs into a conveniently small compass.† When meat is not attainable and good water is scarce, the African severs one of the jugulars of a bullock and fastens upon it like a leech. This custom is common in Karagwah and the other northern kingdoms, and some tribes, like the Wanyika, near Mombasah, churn the blood with milk.

The daily food of the poor is grain, generally holcus, maize, or bajri (*panicum*); wheat is confined to the Arabs, and rice grows locally, as in the Indian peninsula. The inner Africans, like the semi-civilized Arabs of Zanzibar, the Wasawahili, and the Wamrima, ignore the simple art of leavening bread with acidulated whey,

* In the absence of history and tradition, it is difficult to decide whether this aversion to eggs arises from an imported or an indigenous prejudice. The mun-dane egg of Hindoo mythology probably typified the physiological dogma "*omne vivum ex ovo*," and the mystic disciples would avoid it as the principle of life. In remote ages the prejudice may have extended to Africa, although the idea which gave birth to it was not familiar to the African mind.

† This jerked meat, when dried, broken into small pieces, and stored in gourds or in pots full of clarified and melted butter, forms the celebrated travelling provision in the East called *kavurmeh*: it is eaten as a relish with rice and other boiled grains.

our bean-paste, and similar contrivances universally practised in the East. Even the rude Indian chapati or scone is too artificial for them, and they have not learned to toast grain. Upon journeys the African boils his holcus unhusked in an earthen basin, drinks the water, and devours the grain, which in this state is called ma-sango ; at home he is more particular. The holcus is either rubbed upon a stone—the mill being wholly unknown—or pounded with a little water in a huge wooden mortar ; when reduced to a coarse powder, it is thrown into an earthen pot containing boiling water sufficient to be absorbed by the flour ; salt, when procurable, is added ; and after a few stirrings with a ladle, or rather with a broad and flat-ended stick, till thoroughly saturated, the thick mass is transferred into a porous basket, which allows the extra moisture to leak out. Such is the ugali, or porridge, the staff of life in East Africa.

During the rains vegetables are common in the more fertile parts of East Africa ; they are within reach of the poorest cultivator. Some varieties, especially the sweet potato and the mushroom, are sliced and sun-dried to preserve them through the year. During the barren summer they are boiled into a kind of broth.

Milk is held in high esteem by all tribes, and some live upon it almost exclusively during the rains, when cattle find plentiful pasture. It is consumed in three forms—"mabichi," when drunk fresh ; or converted into mabivu (butter-milk), the rubb of the Arabs ; or in the shape of mtindi (curded milk), the laban of Arabia, and the Indian dahi. These Africans ignore the dudh-pinda, or ball of fresh-milk boiled down to hardness by evaporation of the serum, as practised by the Indian halwai (confectioner) ; the indurated sour-clot of Arabia, called by the Bedouins el igt, and by the Persians, the Baloch, and the Sindhians kurut, is also unknown ; and they consider cheese a miracle, and use against it their stock denunciation, the danger of bewitching cattle. The fresh produce moreover has few charms as a poculent amongst barbarous and milk-drinking races : the Arabs and the Portuguese in Africa avoid it after the sun is high, believing it to increase bile, and eventually to cause fever : it is certain that, however pleasant the draught may be in the cool of the morning, it is by no means so much relished during the heat of the day. On the other hand, the curded milk is everywhere a favourite on account of its cooling and thirst-quenching properties, and the people accustomed to it from infancy have for it an excessive longing. It is procurable in every village where cows are kept, whereas that newly drawn is generally half soured from being at once stored in the earthen pots used for curdling it. These East Africans do not, however, make their dahi, like the Somal, in lumps floating upon the tartest

possible serum ; nor do they turn it, like the Arabs, with kid's rennet, nor like the Baloch with the solanaceous plant called panir. The best is made, as in India, by allowing the milk to stand till it clots in a pot used for the purpose, and frequently smoked for purity. Butter-milk is procurable only in those parts of the country where the people have an abundance of cattle.

Butter is made by filling a large gourd, which acts as churn, with partially-soured milk, which is shaken to and fro : it is a poor article, thin, colourless, and tainted by being stored for two or three months, without preliminary washing, in the bark-boxes called vilindo. In the Eastern regions it is converted into ghee by simply melting over the fire : it is not boiled to expel the remnant of sour milk, impurities are not removed by skimming, and finally it becomes rancid and bitter by storing in pots and gourds which have been used for the purpose during half a generation. The Arabs attempt to do away with the nauseous taste by throwing into it when boiling a little water, with a handful of flour or of unpowdered rice. Westward of Unyamwezi butter is burned instead of oil in lamps.

The common oil in East Africa is that of the karanga, bhui-phali, or groundnut (*Arachis hypogaea*) : the Arabs eat it when ghee is not procurable, like cocoa-nut oil, with beans, manioc, sweet-potato, and other vegetables. A superior kind of cooking-oil is the "uto" extracted from the ufuta, simsim or sesamum, which grows everywhere upon the coast, and extends far into the interior. The process of pressing is managed by pounding the grain dry in a huge mortar ; when the oil begins to appear, a little hot water is poured in, and the mass is forcibly squeezed with huge pestles ; all that floats is then ladled out into pots and gourds. The viscid chikichi (palm-oil) is found only in the vicinity of the Tanganyika Lake,* although the tree grows in Zanzibar and its adjacent islets. Oil is extracted from the two varieties of the castor-plant ; and, in spite of its unsavoury smell, it is extensively used as an unguent by the people. At Unyanyembe and other places where the cucumber grows almost wild, the Arabs derive from its seed an admirable salad-oil, which in flavour equals, and perhaps surpasses, the finest produce of the olive. The latter tree is unknown in East Africa to the Arabs, who speak of it with a religious respect, on account of the mention made of it in the Koran.

In East Africa every man is his own maltster ; and the "Iwánzá," or public-house of the village, is the common brewery. In some tribes, however, fermentation is the essential occupation of the women. The principal inebriant is a beer without hops, called pombe. This *πότος θειος* of the negro and negroid races dates

* This is the red oil alluded to in Chap. VII.

from the age of Osiris : it is the buzah of Egypt and the farther East, and the merissa of the Upper Nile, the ξύρος and xythum of the West, and the oala or boyaloa of the Kafirs and the South African races. Pombe is a muddy mixture, tasting somewhat like soured wort of the smallest description, but strangers, who at first dislike it exceedingly, are soon reconciled to the draught by the pleasurable sensations to which it gives rise. Without violent action, it affects the head, and produces an agreeable narcotism, followed by sound sleep and a heaviness in the morning. Being, as the Arabs say, a "cold drink," causing hydrocele and rheumatism, it has some of the after-effects of gin, and the drunkard is readily recognised by his red and bleared eyes. When made thick with the grounds or sediment of grain, it is exceedingly nutritious. Many a gallon must be drunk by the veteran malt-worm before intoxication ; and individuals of both sexes sometimes live almost entirely upon pombe. It is usually made as follows : Half of the grain* intended for the brew is buried or soaked in water till it sprouts ; it is then pounded and mixed with the other half, also reduced to flour, and sometimes with a little honey. The compound is boiled twice or thrice in huge pots, strained, when wanted clear, through a bag of matting, and allowed to ferment : after the third day it becomes as sour as vinegar. The "togwa" is a favourite drink, also made of holcus. At first it is thick and sickly, like honeyed gruel ; when sour it becomes exceedingly heady. As these drinks consume a quantity of grain, they are expensive ; the large gourdful never fetches less than 2 khete or strings of beads, and strangers must often pay 10 khete for the luxury. Some years ago an Arab taught the Wanyamwezi to distil : they soon however returned to their favourite fermentation.

The use of pombe is general throughout the country : the other inebriants are local. At the island and on the coast of Zanzibar tembo, or toddy, is drawn from the coco-tree ; † and in places a pernicious alcohol, called mvinyo, is extracted from it. The Wajiji and other races upon the Tanganyika Lake tap the Guinea-palm for its juice, which, drawn in unclean pots, soon becomes acid and acrid as the Silesian wine that serves to mend the broken limbs of the poor. The use of bhang and datura-seed has already been alluded to. "Máwá," or plantain-wine, is highly prized because it readily intoxicates. The fruit when ripe is peeled and hand-kneaded with coarse green grass, in a wide-mouthed earthen pot, till all the juice is extracted : the sweet must is strained through a

* The Wasukuma make it of two grains, holcus and bajri, pounded and soaked in separate pots till fermented, and then mixed and boiled.

† Wonderful to relate, Dr. Krapf ("Zeitschrift der Deutsche Morgenländische Gesellschaft") asserts that the Wanyika, near Mombasah, "prepare a strong drink from cocoa-nuts."

cornet of plantain-leaf into a clean gourd, which is but partially stopped. To hasten fermentation a handful of toasted or pounded grain is added : after standing for two days in a warm room the wine is ready for drinking.

The East Africans ignore the sparkling berille or hydromel of Abyssinia and Harar, and the mead of the Bushman race. Yet honey abounds throughout the country, and near the villages log-hives, which from their shape are called mazinga or cannons by the people, hang from every tall and shady tree. Bees also swarm in the jungles, performing an important part in the vegetable economy by masculation or caprification, and the conveyance of pollen. Their produce is of two kinds. The cheaper resembles wasp-honey in Europe ; it is found in the forest, and stored in gourds. More than half-filled with dirt and wood-bark, it affords but little wax ; the liquid is thin and watery, and it has a peculiarly unpleasant flavour. The better variety, the hive-honey, is as superior to the produce of the jungle as it is inferior to that of India and of more civilized lands. It is tolerable unless kept too long, and it supplies a good yellow wax, used by the Arabs to mix with tallow in the manufacture of "dips." The best honey is sold after the rains ; but the African keeps his store till it reddens, showing the first stage of fermentation : he will eat it after the second or third year, when it thins, froths, and becomes a rufous-brown liquid of unsavoury taste ; and he rarely takes the trouble to remove the comb, though the Arabs set him the example of straining the honey through bags of plantain-straw or matting. Decomposition, moreover, is assisted by softening the honey to extract the wax over the fire instead of placing it in the sun. The price varies from 1 to 3 cloths for a large gourdful. When cheap, the Arabs make from it "honey-sugar :" the material, after being strained and cleaned, is stored for two or three weeks in a cool room till surface-granulation takes place ; the produce resembles in taste and appearance coarse brown sugar. The "siki," a vinegar of the country, is also made of one part honey and four of water, left for a fortnight to acetise : it is weak and insipid. Honey is the only sweetener in the country except in the places where the sugar-cane grows, namely, the maritime and the Lakist regions. The people chew it, ignoring the simple art of extracting and insipisating the juice ; nor do they, like the natives of Usumbara, convert it into an inebriant. Yet sugar attracts them like flies ; they clap their hands with delight at the taste ; they buy it for its weight of ivory ; and if a thimbleful of the powder happen to fall upon the ground, they will eat an ounce of earth rather than lose a grain of it.

After eating, the East African invariably indulges in a long fit of torpidity, from which he awakes to pass the afternoon as he did

the forenoon, conversing, playing, smoking, and chewing "sweet-earth." Towards sunset all issue forth to enjoy the coolness: the men sit outside the Iwanza, whilst the women and the girls, after fetching water for household wants from the well, collecting in a group upon their little stools, indulge in the pleasures of gossipred and the pipe. This hour in the more favoured parts of the country is replete with enjoyment, which even the barbarian feels, though not yet indoctrinated into aesthetics. The sweet and balmy air floats in waves like the draught of a fan; the sky is soft and serene; the fleecy clouds and mists are robed in crimson and gold; and the glorious sun rains a mellow light upon the earth, glinting through the emerald of the trees, and defining each purple shadow with a picturesque distinctness. At this time all is life. The vulture soars high in the transparent firmament, and the smaller birds preen themselves for the night, and sing their vesper-song; fish leap from the rivers, and the cattle and flocks gambol and frisk whilst being driven home from the meadow. As the hours of darkness draw nigh, the village doors are carefully closed, and, after milking his cows, each villager retires to his hut, or passes his time squatting round the fire with his friends in the Iwanza. He has not yet learned the art of making a wick, and of filling a bit of pottery with oil. When a light is wanted, he ignites a stick of the oleaginous mtata-tree,* which burns for a quarter of an hour with a brilliant flame. He repairs to his hard couch before midnight, and snores with a single sleep till dawn. For thorough enjoyment, night must be spent in insensibility, as day is in inebriety; and though an early riser, he avoids the "early to bed," in order that he may be able to slumber through half the day.

Such is the African's idle day, and thus every summer is spent. As the wintry rains draw nigh, the necessity of daily bread suggests itself. The peasants then leave their huts at 6 or 7 A.M., often without provision, which now becomes scarce, and labour till noon, or 2 P.M., when they return home, and find food prepared by the wife or the slave-girl. During the afternoon they return to work, and sometimes, when the rains are near, they are aided by the women. Towards sunset all wend homewards in a body, laden with their implements of cultivation, and singing a kind of "dulce domum" in a simple and pleasing recitative.

When the moon shines bright the spirits of the East African are raised like the jackal's, and a furious drumming and a droning chorus summon the maidens to come out and enjoy the spectacle of a dance. The sexes seldom perform together, but they have no objection to be gazed at by each other. Their style of saltation

* The mtatá or msásá is a yellow, hard, close-grained, and elastic wood, with few knots, much used in making spears, bows, and walking staves.

is remarkable only for the extreme gravity which it induces. At no other time does the East African look so serious and so full of earnest purpose. Yet with all their thoughtfulness, "poor human nature cannot dance of itself." The boys, the adults, and even the old men, join together in a ring, humming in an undertone, and simultaneously lifting first one foot and then the other, plumbing with a heavier stamp to mark the several periods. At the beginning they bend the body backwards and forwards, or sway it from side to side gently and regularly like dancing dervishes: as the excitement rises the fun becomes fast and furious—arms are tossed in the air, bodies are doubled up and contorted as if tortured by cramps and colics, dust rises in clouds from the deeply-ringed ground—and when all are out of breath they suddenly stop with a roar of laughter, and are saluted with frantic plaudits. Often in a *pas seul* the buffoon of the village, with strips of long-haired cow-hide bound round his head, arms, and legs, agitates his limbs as if they were dislocated, to the intense enjoyment of the public. The performance is often closed with a grand promenade, all the dancers being jammed in a rushing mass, a *galop infernale*, with the features of satyrs, and gestures resembling anything but human. And, as may be imagined, the African Thalia is by no means free from the reproach which caused Mohammed to taboo her to his followers.

Music is at a low ebb in East Africa. Admirable timists, and no mean tunists, the people betray their incapacity for improvement by remaining contented with the simplest and most monotonous combinations of sounds. As in everything else, so in this art, creative talent is wanting. A higher development would have produced other results; yet it is impossible not to remark the delight which they take in harmony. The fisherman will accompany his paddle, the porter his trudge, and the housewife her task of rubbing down grain, with song; and for long hours at night the peasants will sit in a ring repeating, with a zest that never flags, the same few notes, and the same unmeaning line. Their style is the recitative, broken by a full chorus, and they appear to affect the major rather than the interminable minor key of the Asiatic. Their singing also wants the strained upper notes of the cracked-voiced Indian performer, and it ignores the complicated raga and ragini or Hindu modes, which appear rather the musical expression of high mathematics than the natural language of harmony and melody.

The instruments of the East African are all of foreign invention imported from various regions, Madagascar and the coast. Those principally in use are the following. The zeze, or banjo, resembles in sound the monochord Arabian rubabah, the rude ancestor of the Spanish guitar. The sounding-board is a large hollow gourd,

open below; on the upper part, fastened by strings that pass through drilled holes, is a conical piece of gourd, cleft longitudinally to admit the arm or handle, which projects at a right angle. The arm is made of light wood, from 18 inches to 2 feet in length; the left-hand extremity has three frets formed by two notches, with intervals, and thus the total range is of six notes. A single string, made of "mondo," the fibre of the mwale or raphia-palm, is tied to a knob of wood projecting from the dexter extremity of the handle, passes over a bridge of bent quill, which for tuning is raised or depressed, and is secured round another knob at the end beyond the frets. Sometimes, to form a bass or drone, a second string is similarly attached along the side of the arm, whilst the treble runs along the top.

The kinanda, a prototype of the psaltery and harp, the lute and lyre, and much used by the southern races in the neighbourhood of Kilwa, is of two kinds. One is a shallow box cut out of a single plank, 13 inches long by 5 or 6 in breadth, and about 2 inches in depth: 11 or 12 strings are drawn tightly over the hollow. The instrument is placed in the lap, and performed upon with both hands. The other is a small bow-guitar, with an open gourd attached to the part about the handle: sometimes the bow passes through the gourd. This instrument is held in the left hand, whilst the "tocador" strikes its single chord with a thin cane plectrum about 1 foot long. As in the zeze, the gourd is often adorned with black tattoo or bright brass tacks disposed in various patterns, amongst which the circle and the crescent figure conspicuously. A third form of the kinanda appears to be a barbarous prototype of the Grecian lyre, which, like the modern Nubian "kisirka," is a lineal descendant from the Egyptian oryx-horn lyre with the transverse bar. A combination of the zeze and kinanda is made by binding a dwarf hollow box with its numerous strings over the open top of a large circular gourd, which acts as a sounding-board.

The wind-instruments are equally rude, though by no means so feeble as their rivals. The nai or sackbut of India, and the siwa, a huge bassoon of black wood at least 5 feet long, are known only to the coast-people. The tribes of the interior use the det'he or kidete, called by the Wasawahili zumari. It is literally the bucolic reed, a hollowed holcus-cane, pierced with four holes at the further end: the mouthpiece is not stopped in any way, and the instrument is played upon solely by the lips, a drone being sometimes supplied by the voice. Thus simple and ineffective, it has nevertheless a familiar sound to European ears. The barghumi is made by cutting an oblong hole, about the size of a man's nail, within 2 or 3 inches of the tip of a koodoo, an oryx, or a goat's horn, which, for effect and appearance, is sometimes capped with a bit of cane,

whence projects a long zebra's or giraffe's tail. Like the det'he, it is played upon by the lips; and without any attempt at stops or keys, four or five notes may be produced. Its sound heard from afar, especially in the deep silence of a tropical night, resembles not a little the sad, sweet music of the French cor de chasse; and when well performed upon, it might be mistaken for a regimental bugle. There are smaller varieties of the barghumi, which porters carry slung over the shoulder, and use as signals on the line of march. Another curious instrument is a gourd a few inches in circumference, drilled with many little apertures: the breath passes through one hole, and certain notes are produced by stopping others with the fingers. Its loud, shrill, and ear-piercing quavers faintly resemble the European "piccolo." The only indigenous music of the pastoral African—the Somal, for instance—is whistling, a habit acquired in youth when tending the flocks and herds. This "Mu'unzi" is soft and dulcet; the ear, however, fails to detect in it either phrase or tune. For signals the East Africans practise the kik'horombwe, or blowing between the fore and the middle fingers with a noise like that of a railway whistle. The Wanyamwezi also blow over the edge of the hollow in a small antelope's horn, or through an iron tube; and the Watuta are said to use metal-whistles as signals in battle.

The drum is ever the favourite instrument with the African, who uses it as the alarum of war, the promise of mirth, the token of hospitality, and the cure of diseases: without drumming his life would indeed be a blank. The largest variety, called "ngoma ku," is the hollowed bole of a mkenga or other soft tree; a cylindrical solid projection from the bottom holds it upright when planted in the ground. The instrument is from 3 to 5 feet in length, with a diameter of from 1 to 2 feet: the outside is protected with a net-work of strong cord. Over the head is stretched a rough parchment made of calf's-skin; and a cap of green hide, mounted when loose, and afterwards shrunk by exposure to fire, protects the bottom. It is vigorously beaten with the fists, and sometimes with coarse sticks. There are many local varieties of this instrument, especially the timbrel or tabret, which is about a foot long, shaped like an hour-glass or a double "darabukkah," and provided with a head of iguana-skin. The effect of tom-tomming is also produced by striking hollow gourds and similar articles. The only cymbal is the upatu, a flat-bottomed brass pot turned upside down, and tapped with a bit of wood. The "sanje" is much affected in parts of the country by women and children, and especially by the mganga or rain-maker; its use being that of the babe's rattle amongst Europeans.

The insipidity of the African's day is relieved by frequent drinking bouts, and by an occasional hunt. For the former the guests

assemble at early dawn, and take their seats in a circle, dividing into knots of three or four to facilitate the circulation of the bowl. The *mwandázi*, or cup-bearer, goes round the assembly, giving scrupulous precedence to the chiefs and elders, who are also provided with larger vessels. The *sonzo*, or drinking-cup, which also serves as a travelling canteen, is made, generally by the women, of a kind of grass called *mávú* or of wild palm-leaf: the split stalks are neatly twisted into a fine cord, which is rolled up, beginning from the bottom, in concentric circles, each joined to its neighbour by a binding of the same material: it is sometimes stained and ornamented with red and black dyes. The shape when finished is a truncated cone, somewhat like a Turk's fez; it measures about 6 inches in diameter by 5 in depth, and those of average size may contain a quart. This cup passes round without delay or heel-taps, and the topers stop occasionally to talk, laugh, and snuff, to chew tobacco, and to smoke *bhang*. The scene of sensuality lasts for three or four hours—in fact, till the *pombe* prepared for the occasion is exhausted,—when the carousers, with red eyes, distorted features, and the thickest of voices, stagger home to doze through the day. Perhaps in no European country are so many drunken men seen abroad as in East Africa. Women also frequently appear intoxicated; they have, however, private "*pombe*," and do not drink with the men.

The East African, who can seldom afford to gratify his longing for meat by slaughtering a cow or a goat, looks eagerly forward to the end of the rains, when the grass is in a fit condition for firing; then, armed with bows and arrows, and with *rungu* or knob-kerries, the villagers have a battue of small antelopes, hares, and birds. During the hot season also, when the waters dry up, they watch by night at the tanks and pools, and they thus secure the larger kinds of game. Elephants especially are often found dead of drought during the hot season; they are driven from the springs which are haunted by the hunters, and, according to the Arabs, they fear migrating to new seats where they would be attacked by the herds in possession. In many parts the huntsmen suspend by a cord from the trees sharpened blocks of wood, which, loosened by the animal's foot, fall and cause a mortal wound.* Throughout Ugogo and upon the maritime regions large game is caught in pitfalls, here called *mtego*, and in India *ogi*: in some places travellers run the risk of falling into these traps. The *mtego* is an oblong excavation like a great grave, but decreasing in breadth

* This "suspended spear," loosed by a latch, has been described by a host of S. African travellers. It has been sketched by Lieut. Boteler ('Narrative of a Voyage of Discovery to Africa and Arabia,' chap. iv.) and Major Monteiro ('O Muata Cazembe,' chap. v.), and described by Mr. Galton, Mr. Gordon Cumming, and Dr. Livingstone, (chap. xxviii.).

below the surface of the ground, and it is always found single, not in pairs as in S. Africa. The site generally chosen is near water, and the hole is carefully masked with thin layers of small sticks and leaves.* The Indian "surrounds" and the hopo or V-shaped trap of the Bakwens are here unknown. The distribution of treasure-trove would seem to argue ancient partitions and lordships, and, in dividing the spoils of wild or tame animals, the chief claims, according to ancient right, the breast.†

The elephant roams in herds throughout the country, affecting the low grounds where stagnating water produces a plentiful vegetation: with every human being his foe and thousands living by his destruction, the animal is far from becoming scarce; indeed, the greatest number of footprints appeared near Chogwe and Tongwe, stations of Baloch garrisons close to the town of Pangani. The elephant hunt is with the African a solemn and serious undertaking. He fortifies himself with periaps and prophylactics given by the mganga, who also trains him to the use of his weapon. The elephant-spear resembles our boarding-pike rather than the light blunt arm employed in war: it is about six feet long, with a broad tapering head cut away at the shoulders, and supported by an iron neck which is planted in a thick wooden handle, the junction being secured by a cylinder of raw hide from a cow's tail passed over it, and allowed to shrink on by drying. The spear is invariably guarded by a mpigi or charm, the usual two bits of wood bound together with a string or strip of skin. It is not a little curious that the East African, though born and bred a hunter, is, unlike almost all barbarians, as skill-less as an European in the art of el asr, the "spoor" or "sign."

The hunting party, consisting of fifteen to twenty individuals, proceeds before departure to sing and dance, to drink and drum for a consecutive week. The women form line and perambulate the village, each striking an iron jembe or hoe with a large stone, which forms an appropriate accompaniment to the howl and the vigelegele, "lullilooing," or trills of joy. At every step the dancer sways herself elephant-like from side to side, and tosses her head backwards with a violence threatening dislocation of the atlas. The line, led by a fugle-woman by the right, who holds two jembe in one hand, but does not drum, stops facing every Arab house where beads may be expected, and performs the most hideous contortions, whirling the arms round the shoulder-socket, kneeling, and imitating the actions of various animals. The labour done, the ladies apply to their pombe, and reappear after four or five hours with a tell-tale stagger and a looseness of limb

* Dr. Livingstone describes the same kind of pitfall in chsp. iii.

† A custom apparently borrowed by the Hebrews from Africa. See Leviticus, chap. vii., vv. 30, 31. It is alluded to by almost all S. African travellers.

which adds a peculiar charm to their gesticulations. The day concludes with a "fackeltanz" of remarkable grotesqueness. This merry-making is probably intended as a consolation for the penance which the elephant-hunter's wife performs during the absence of her mate: she is expected to abstain from good food, handsome clothes, and fumigation: she must not leave the house, and for an act of infidelity the blame of failure in the hunt will fall heavily upon her. Meanwhile the men—at least as "far gone" as the women—encircle, with a running jumping gait and with the grace and science of well-trained bears, a drum or a kilindo—the normal bark bandbox,—placed with open mouth upon the ground, and violently beaten with sticks and fists or rubbed and scraped with stones. It forms also a sounding-board for a kinanda or bow-guitar, one end of which is applied to it, whilst a shrill fife of goat's horn gives finish and completeness to the band. Around the drum are placed several elephants' tails, probably designed to serve the purpose of the clay corpse in the coffin introduced into the feasts of ancient Egypt.

When thoroughly drenched with drink, the hunters set out early in the morning, carrying live brands lest fire should fail them in the jungle, and applying them to their mouths to keep out the raw air. These trampers are sometimes dangerous to stragglers from caravans, especially in countries where the robber or the murderer expects to escape with impunity. In some places hunting-huts have been erected; they are however seldom used when elephants are sought, as a herd once startled does not readily return to the same pasture-grounds. The great art of the African muinzi or elephant-hunter is to separate a tusker from the herd without exciting suspicion, and to form a circle round the victim. The mganga then rising with a shout hurls or thrusts the first spear, and his example is followed by the rest. The weapons are not poisoned: they are fatal by a succession of small wounds. The baited beast rarely breaks, as might be expected, through the frail circle of assailants: its proverbial obstinacy is excited; it charges one man, who slips away, when another with a scream thrusts the long stiff spear* into its hind quarters, which makes it change intention and turn fiercely from the fugitive to the fresh assailant. This continues till the elephant, losing breath and heart, attempts to escape; its enemies then redouble their efforts, and at length the huge prey, overpowered by the pain and the loss of blood trickling from a hundred gashes, bites the dust. The victors, after certain preliminaries of singing and dancing, carefully cut out the tusks with small sharp axes, and the rich marrow is at once picked

* A specimen of the hunting spear was deposited with the R. G. Society.

from the bamboo and devoured upon the spot, as the hare's liver is in Italy. The hunt concludes with a grand feast of fat and garbage, and the hunters return home in triumph, laden with ivory, with ovals of hide for shields, and with festoons of raw and odorous meat spitted upon long poles.

Throughout East Africa the mouse, as the saying is, travels with a staff: the education of youth and the exercises of manhood are confined to the practice of weapons. Yet the people want the expertness of the Somal in the North and the Kafirs of the South; their internal feuds perpetuate the necessity of offensive measures, and of the presence of arms, but their agricultural state, rendering them independent of the chase, prevents their reliance upon their skill for daily food. In consequence of being ever armed, the African like the Asiatic is nothing without his weapons; he cannot use his strength, and when he comes to blows he fights like a woman. Thus the constant presence of arms is a mere substitute for courage; in dangerous countries, as in Ugogo, the Wanyamwezi do not dare to carry them for fear of provocation, whereas at home and in comparative safety they never appear without spear or knobstick.

The weapons universally known are the spear and assegai. The bow and arrow, the knobkerry, the dagger, and the battle-axe are confined to certain tribes, whilst the musket and the sword are used beyond the coast only by strangers. The shield is seldom seen.

The lance of the European, Arab, and Indian is unknown to these unequestrian races. The bravest tribes prefer the stabbing-spear, which brings them to close quarters with the enemy. The weapon indeed cannot make the man, but by reaction it greatly modifies his manliness. Thus the use of short weapons generally denotes a gallant nation; the old Roman gladius, the French briquet, and the Afghan charay would be useless in the hands of a timid people. Under the impression that the farther men stand from their enemies the less is to be expected from them, the French knights not inaptly termed the "villanous saltpetre" the "grave of honour," whilst their English rivals called the gun a "hell-born murderer," and an "instrument hateful in the sight of God and man." The Africans have also acted upon this idea. A great Kafir chief did what Plutarch relates of Camillus; he broke short the assegais of his "magnificent savages" when he sent them to war, and forbade each warrior to return without having stained his stick with blood; the consequence was, that, instead of "dumb-shooting" at a distance, they rushed in and won.

The mkuki, farari, or spear, is more generally used for stabbing than throwing. It has a long narrow blade of untempered iron,

so soft that it may be bent with the fingers;* it is capable, however, of receiving a fine edge. The shoulders are rounded off, and one or two lines extend lengthways along the centre from socket to point. At the socket where the shaft is introduced, it is covered with a bit of skin from the tail of some animal drawn on like a stocking, and sometimes it is placed on when heated, so as to adhere by contraction of the metal. The shaft, which is five to six feet long, is a branch of the dark-brown mkole or the light-yellow mtata-tree, chosen because close-grained, tough, pliable, and free from knots; it is peeled, straightened in hot ashes, pared down to the heart, smoothed with a knife, carefully oiled or greased, without which it soon becomes brittle, and polished with the leaves of the mkuba-tree. The wood is mostly ornamented with twists of brass and copper wire, it is sometimes plated with zinc or tin, and it is generally provided with an iron heel for planting in the ground. Some tribes—the northern Wagogo and their neighbours the Wamasai for instance—have huge spear-heads like shovels, unfit for throwing. The best weapons for war are made in Karagwah.

The kikuki, assegai, or javelin is much used by the Warori and other fighting tribes, who enter action with a sheaf of those weapons. Nowhere, however, did the East African appear possessed of the dexterity described by travellers amongst the southern races. The assegai resembles the spear in all points, except that the head is often barbed, and it is more lightly timbered; the shaft rarely exceeds four feet in length, and tapers to the thinness of a man's little finger. It is laid upon the palm of the right hand, and balanced with a vibratory motion till the point of equilibrium is found, when it is delivered with little exertion of the muscles beyond the run or spring, and as it leaves the hand it is directed by the forefinger and thumb. Sometimes, to obviate breaking, the assegai is made like the Indian "sang," wholly of iron.

The East African is a "good archère and a fayre." The cubit-high Armiger begins as soon as he can walk with miniature weapons, a cane bow and reed bird-bolts tipped with wood, to practise till perfect at gourds and pumpkins; he considers himself a man when he can boast of iron tips. With many races "pudor est nescire sagittas." The bravest, however, the Wamasai and the Wakwafi, the Warori and the Watuta, ignore the practice; among them—

* The Somal prefer this soft iron to the metal tempered in Europe, which they call "rotten," as the latter, besides being difficult to sharpen, is liable to snap and splinter. In the same way, the European would rather use his own blade than the Damascus sword.

No proof of manhood, none
Of daring courage, is the bow;

and the Somal abandons it to his Midgan or servile. The bow in East Africa is invariably what is called a "self-bow," that is to say, made of a single piece, and backed weapons are unknown. It is uncommonly stiff, and the strongest archer would find it difficult to "draw up a yard;" of this nature probably was the bow sent to Cambyses by the Aethiopian monarch, with the taunting message that he had better not attack men who could bend such weapons. When straight it may measure five feet from tip to tip. It is made with the same care as the spear, from a branch of the mumepweke or the mtata-tree, laboriously cut and scraped so as to taper off towards the horns, and smeared with oil or grease, otherwise it is easily sprung, and it is sometimes adorned with plates of tin and zinc, with copper or brass wire and tips. The string is made of hide, gut, the tendons of a bullock's neck or hock, and sometimes of tree-fibre; it is nearly double the bow in length, the extra portion being whipped for strength as well as use round the upper horn. In shooting the bow is grasped with the left hand, but the thumb is never extended along the handle; the string is drawn with the two bent forefingers, though sometimes the shaft is held after the Asiatic fashion with the thumb and index. The bow is pulled with a jerk as amongst the Somal, and not let fly as by Europeans with a long steady loose. The best bows are made by the tribes near the Rufiji River.

The arrow is about two feet in length; the stele or shaft is made of some light wood, and often of reed. Its fault is want of weight: to inflict damage upon an antelope it must not be used beyond point-blank, fifteen to twenty paces; and a score will be shot into a bullock before it falls. The musketeer, despising the arrow at a distance, fears it at close quarters, knowing that for his one shot the archer can discharge a dozen.* The people have not learned the use of red-hot arrows, and the poisoned shaft, an unmanly weapon ignored by the English and French archers even in their deadliest wars, is confined to the Wanyika of Mombasah, the Wazaramo, the Wakhutu, the Western Wasagara, and the people of Uruwwa.†

* From the days of Franklin to the era of Silistria, Citate, and Kars, fancy tacticians have advocated the substitution of the bow or the addition of it to the "queen of weapons," the musket. Their reasons for a revival of the obsolete arm are its lightness, its rapidity of discharge, and its silent action. They forget however the saying of Xenophon, that it is impiety in a man who has not learned archery from his childhood to ask such boon of the easy gods.

† The Wazaramo and Wakhutu call the plant from which the poison is extracted Mkande kande. They sold at somewhat an exorbitant price a leaf full of the preparation, but avoided pointing out to the Expedition the plant, which from their description appears to be a variety of euphorbia. M. Werne ('Sources of the White Nile,' chap. viii.) says that the river tribes prepare their arrow-

Fearing the action of the wind upon such light shafts if unfledged, the archer inserts into the cloven end three or four feathers, the cockfeather being as in Europe perpendicular when the arrow is notched. The pile or iron head is curiously and cruelly barbed, with long waving tails; the neck is toothed and edged by dinting the iron when hot with an axe, and it is sometimes half-sawed that it may break in the wound. The East Africans also have forkers or two-headed shafts, and bird-bolts or blunt arrows tipped with some hard wood, used when the weapon is likely to be lost. Before loosing an arrow the archer throws into the air a pinch of dust, not to find out the wind, but for good luck, like the Tartars of Tibet before discharging their guns. In battle the heavy-armed man holds his spear and a sheaf of spare arrows in the bow hand, whilst a quiver slung to the left side contains reserve missiles, and a little axe stuck in the right side of the girdle is ready when the rest fail. The ronga or quiver is a bark-case, neatly cut and stained. It is of two forms, full-length and provided with a cover for poisoned, and half-length for unpoisoned arrows.

The rungu or knobkerry is the African club or mace; it extends from the Cape to the negro and the Somal tribes north of the Equator. The shape varies in almost every district: the head is long or round, oval or irregular, and sometimes provided on one side with an edge; it is cut out of the hardest wood, and generally from one piece. In some cases the knob is added to the handle, and in others it is supplied with a spear-head. The handle is generally two feet long, and it is cut thin enough to make the weapon top-heavy. The Mnyamwezi is rarely seen abroad without this weapon; he uses it in the chase, and in battle against the archer of the enemy; he seems to trust it in close quarters rather than the feather-weight arrow or the spear that bends like gutta percha, and most murders are committed with it. The Eastern people do not, like the Kafirs, use the handle of the knobkerry as a dibble.

poison from a kind of *asclepias*, whose milk and sap are pressed out between two stones and allowed to thicken. Dr. Livingstone (chap. viii.) mentions the use of the *n'gwa* caterpillar amongst the Bushmen, who also poison waters with the *Euphorbia arborescens*; and Mr. Andersson (chap. vii.) the *Euphorbia candelabrum* amongst the Ovaherero and the Hill Damaras. In E. Africa the poison-leaves are allowed to distil their juices into a pot, which for inspissation is placed over a slow fire; when thick and slab, the contents are applied with a stick to the arrow, and are smoothed between the hands. When finished, the part behind the barb is covered with a shiny brown-black coat, not unlike pitch, to the extent of four or five inches. When dry it is renewed by the application of a fresh layer, the old being removed by exposure to the fire. The people fear this poison greatly: they wash their hands after touching it, and declare that a wounded man or beast loses sense, "moons about," and comes to the ground before running a quarter of a mile. Much exaggeration must be expected upon the subject of toxicology amongst barbarians: it acts probably, like the Somali arrow-poison, as a strong narcotic, and is rarely fatal even when freshly applied.

The sime or dudgeon is the makeshift for the Arab jambiyah and the Persian khanjar. The shape of this weapon varies in almost every tribe. The Wahumba or Wamasai use blades about four feet long by two fingers in breadth; the long, round, and guardless hilt is ribbed for security of grasp, and covered with leather; their iron is of excellent quality, and the shape of the weapon has given rise to the report that "they make swords on the model of those of the Knights Templars."* The Wazegura and the Wagogo use knives not unlike the poniard of the Somal. In some tribes it is 3·5 ft. long, with a leathern sheath extending half-way up the blade. Generally it is about half that length, straight, pointed, and double-edged, or jagged with teeth. The regions about the Lake manufacture and export great numbers of these weapons, varying from a finger's length to full size.

The shoka or battle-axe is much used by the tribes around the Tanganyika. It has a blade of triangular shape, somewhat longer and thinner than that used as a working tool, and it is passed through the bulging head of a short handle cut out of the bauhinia or some other hard tree. Amongst the Wasagara the peculiar mundu or bill often serves for the same purpose.

The targes of the Wasagara and the Wanyamwezi have already been described; the Wavinza make a shield of basket-work six feet by two, and much resembling that of the southern Kafirs, and the Wa'ungu use large pavoises of bull's hide. It is probable that the exceeding humidity of the climate, so ruinous to leather, prevents the general adoption of the shield; on the march it is merely an encumbrance, and the warrior must carry it on his head beyond the reach of the dewy grass.

The maritime races, the Wazegura and others opposite the island of Zanzibar, have imprudently been allowed to purchase fire-arms, which they employ in obstructing caravans and in kidnapping-commandos against their weaker neighbours. A single German house has, it is said, sold off 13,000 Tower muskets in one year. The arms now preferred are those exported by Hamburg and America; they fetch 4 dollars each; the French single-barrel is somewhat cheaper, averaging 3 dollars 50 cents. In the interior fire-arms are still fortunately rare—the Arabs are too wise to arm the barbarians against themselves. In Unyamwezi an old gun is a present for a chief, and the most powerful rulers seldom can boast of more than three. Gunpowder is imported from Zanzibar

* Mr. Cooley ("Geography of N'yassi," p. 29) mentions this fact of the "Mericongao" (called by Lieut. Boteler, in "Narrative of a Voyage of Discovery to Africa and Arabia, " "Meriemongao"). The name of the tribe is unknown at Zanzibar, but its position, "about two months' journey from Mombasah, behind the Wanyika," would identify it with the Wakamba (chap. iii.). Thus M. Guillain (vol. iii., p. 216) asserts that Warimangao is the name given by the people of Mombasah to the people of Ukambani.

in kegs of 10 and 25 lbs., bearing the American mark ; it is of the description used in blasting, and fouls the piece after a few discharges. The usual prices vary at Zanzibar from 3 dollars 50 cents to 7 dollars, and upon the coast from 5 to 10 dollars per small keg ; in Unyamwezi ammunition is exchanged for ivory and slaves, and some Arab merchants keep as many as thirty kegs in the house, which they retail to factors and traders at the rate of 1 to 2 shukkah per lb.

Swords in East Africa are used only by strangers. The Wasawahili and the slave-factors prefer the kittareh, a curved sabre made in Oman and Hazramaut, or, in its stead, an old German cavalry-blade. The Arabs carry as a distinction the "faranji," a straight, thin, double-edged, guardless, and two-handed sword, about four feet long, and sharp as a carving-knife ; the price varies from 10 to 100 dollars.

The negroid is an unmechanical race ; his industry has scarcely passed the limits of savage invention. Though cotton abounds in the interior, only the Wanyamwezi have attempted a rude loom ;* and the working of iron and copper is confined to the Wafyoma and the Lakist races. The gourd is still the principal succedaneum for pottery. The other branches of industry which are necessary to all barbarians are mats and baskets, ropes and cords.

Carpentering amongst the East Africans is still in its rudest stage ; no Daedalus has yet taught them to jag their daggers into saws for wood. The art is limited to making the cots and cartels upon which the people invariably sleep, and to carving canoes, mortars, bowls, rude platters, spoons, stools, and similar articles of furniture. The tree, after being rung and barked to dry the juices, is felled by fire or the axe ; it is then cut up into lengths of the required dimensions, and hacked into shape with slow and painful toil. The tools are a shoka, or hatchet of puerile dimensions, perhaps one-fifth the size of our broad axes, yet the people can use it to better advantage than the admirable implement of the backwoodsman. The mbizo or adze is also known in the interior, but none except the Fundi and slaves trained upon the coast have ever seen a hand-saw, a centre-bit, or a chisel.

Previous to weaving, cotton is picked and cleaned with the hand ; it is then spun into a coarse thread. Like the Paharis of India, the East Africans ignore the distaff ; they twist the material round the left wrist. The mlavi, or spindle, is of two forms ; one is a short stick, inserted in a hole through a lump of lead or burnt clay, like the Indian bhaunri ; the other is a thin bit of wood, about 1·5 ft. long, with a crescent of the same material on

* According to the Arabs, cloths are also made by the Wafipa tribe, on the S. E. of the Tanganyika Lake, and the growth of cotton is superior to the coarse produce of arid Unyanyembe.

the top, and an iron hook to hold the thread. The utanda, or loom-frame, differs from the vertical shape of West Africa. A pair of side-poles about 12 ft. long, and supported at the corners by four uprights, is placed at an angle, enabling the workman to stand to his work ; and the oblong is completed by two cross-bars, round which the double line of the warp, or longitudinal threads of the woven tissue, are secured. The dimensions of the web vary from 5 to 6 ft. in length, by 2 to 3 broad. The weft, or transverse thread, is shot with two or three thin laths, or spindles, round which the white and coloured yarns are wound through the doubled warp, which is kept apart by another lath passing between the two layers, and the spindle is caught with the left hand as it appears at the left side. Lastly, a lath, broader and flatter than the others, is used to close the work, and to beat the thread home. As the workman deems three hours per diem ample labour, a cloth will rarely be finished under a week. Taste is shown in the choice of patterns : they are sometimes checks with squares, alternately black and white, or in stripes of black variegated with red dyes upon a white ground : the lines are generally broad in the centre, but narrow along the edges, and the texture not a little resembles our sacking. The dark colour is obtained from the juice of the mzima-tree ; it stains the yarn to a dull brown, which becomes a dark mulberry, or an Indian-ink black, when buried for two or three days in the vegetable mud of the ponds and pools. The madder-red is produced by boiling the root and bark of a bush called mda'a ; an ochreish tint is also extracted from the crimson matter that stains the cane and the leaves of red holeus. All cloths have the tambua or fringe indispensable in East Africa. Both weaving and dyeing are men's work in these lands.

The cloth is a poor article : like the people of Ashanti, who from time immemorial have woven their own cottons, the East African ever prefers foreign fabrics. The loose texture of his own produce admits wind and rain ; when dry it is rough and unpleasant, when wet heavy and comfortless as leather : and it cannot look clean, as it is never bleached. According to the Arabs, the yarn is often dipped into a starch made from grain, for the purpose of thickening the appearance of the texture : this disappears after the first washing, and the cloth must be pegged down to prevent its shrinking to half size. The relative proportion of warp and weft is unknown, and the woolly fuzzy quality of the half-wild cotton now in use impoverishes the fabric. Despite the labour expended upon these cloths, the largest size may be purchased for six feet of American domestics, or for a pair of iron hoes : there is therefore little inducement to extend the manufacture.

Iron is picked up in the state called utundwe, or gangue, from the sides of low sandstone hills : in places the people dig pits from

2 to 4 feet deep, and, according to the Arabs, they find the metal in tears, nodules, and rounded lumps. The pisolithic iron, common in the maritime regions, is not worked. The mhesi or blacksmith's art is still in its infancy. The iron-stone is carried to the smithy, an open shed, where the work is done : the smelting-furnace is a hole in the ground, filled with lighted charcoal, upon which the utundwe is placed, and, covered with another layer of fire, it is allowed to run through the fuel. The blast is produced by mafukutu (bellows) : they are two roughly rounded troughs, about 3 inches deep by 6 in diameter, hewn out of a single block of wood and prolonged into a pair of parallel branches, pierced for the passage of the wind through two apertures in the walls of the troughs. The troughs are covered with skin, to which are fixed two long projecting sticks for handles, which may be worked by a man sitting. A stone is placed upon the bellows for steadiness, and clay nozzles, or holcus-canes with a lateral hole, are fixed on to the branches to prevent them from charring. Sometimes as many as five pairs are worked at once, and great is the rapidity required to secure a continuous outdraught.* The ore is melted and remelted several times, till pure ; tempering and case-hardening are unknown, and it is stored for use by being cast in clay-moulds, or made up into hoes. The hammer and anvil are generally smooth stones. The principal articles of ironmongery are spears, assegai and arrowheads, battle-axes, hatchets, and adzes, knives and daggers, sickles and razors, rings and sambo, or wire-circlets. The kinda is a large bell, hung by the ivory-porter to his tusk on the line of the march : the kengere or kiugi a smaller variety which he fastens to his legs. Pipes, with iron bowls and stems, are made by the more ingenious, and the smoker manufactures for himself small pincers or pliers which, curious to say, are unknown even by name to the more civilized people of Zanzibar.

Copper is not found upon this line in East Africa. From the country of the Kazembe, however, an excellent red and heavy, soft and bright variety, not unlike that of Japan, finds its way to Ujiji, and sometimes to the coast. It is sold in bars from 1 to 2 feet long. At Ujiji, where it is cheap, 4 to 5 pounds are procurable for 2 doti, there worth about 4 dollars. Native copper, therefore, is almost as expensive as that imported from Europe. It is used in making the rude and clumsy bangles affected by both sexes, sambo, and ornaments for the spear and bow, the staff and the knobkerry.

The art of ceramics has made but little progress in East Africa ; no Anacharsis has yet arisen to teach her sons the use of the wheel. The figuline, a greyish-brown clay, is procured from river-beds, or

* Mr. Andersson ('Lake Ngami,' chap. xvi.) gives a sketch of a similar contrivance amongst the S. Africans : the clay tubes, however, are somewhat larger than those used in Unyamwezi by "blacksmiths at work."

dug up in the country ; it is subjected to the preliminary operations of pounding, rubbing dry upon a stone, pulverizing, and purifying from stones and pebbles. It is then worked into a thick mass, with water, and the potter fashions it with the hand, first shaping the mouth ; he adds an inch to it when dry, hardens it in the sun, makes another addition, and thus proceeds till it is finished. Lines and other ornaments having been traced, the pots are baked in piles of seven or eight, by burning grass—wood-fire would crack them—consequently the material always remains half raw. Usually the colour becomes lamp-black : in Usagara, however, the potter's clay burns red, like the soil—the effect of iron. A cunning workman will make in a day four of these pots, some of them containing several gallons, and their perfect regularity of form, and often their picturesqueness of shape, surprise the stranger. The best are made in Ujiji, Karagwah, and Uganda : those of Unyamwezi are inferior, and the clay of Zanzibar is of all the worst.

There are many kinds of pots which not a little resemble the glazed jars of ancient Egypt. The ukango, which acts as vat in fermenting liquor, is of the greatest dimensions. The mtungi is a large water-vessel with a short and narrow neck, and rounded at the bottom so as to be conveniently carried on the head. The chungu, or cooking-pot, has a wide and open mouth ; it is of several varieties, large and small. The mkungu is a shallow bowl, precisely like those made at the tomb of Moses, and now familiar to Europe. At Ujiji and on the Lake they also manufacture smaller vessels, with and without spouts.

In a country where pottery is scarce and dear, the buyu or *Cucurbita lagenaria* supplies every utensil except those used for cooking ; its many and various adaptations render it a valuable production. The people train it to grow in the most fantastic shapes, and ornament it by tattooing with dark paint, and by patterns worked in brass tacks and wires : where it splits it is artistically sewn together. The larger kinds serve as well-buckets, water-pots, travelling canteens, churns, and the sounding-boards of musical instruments : a hookah, or water-pipe, is made by distorting the neck,* and the smaller varieties are converted into snuff-boxes, medicine-cases, and unguent-pots. The fruit of the calabash-tree is also called buyu : split and dried it is used as ladles, but it is too small to answer all the purposes of the gourd.

The East Africans excel in the manufacture of mtemba or borit†—pipe-heads. These are of two kinds. One is made from a soft stone, probably steatite, found in Usonga, near Utumbara, and on

* A long piece of bamboo, as amongst some of the wilder races of Indians, is also converted into a water-pipe.

† This word varies everywhere in signification. In Western Arabia it means the whole water-pipe or bukkah. In Eastern Arabia, Zanzibar, and the Sawahib, it signifies the moveable pipe-bowl. In the Somali country it is invariably used for tobacco.

the road to Karagwah: it is, however, rare, and about ten times the price of the clay bowls, because less liable to break. The other is made of a plastic or pipe-clay, too brittle to serve for pots, and it invariably cracks at the shank, unless bound with wire. Both are hand-made, and are burned in the same rough way as the pottery. At Msene, where the clay pipe is cheapest, the price of the bowl is a khete, or double string of white or blue beads. The pipe of Unyamwezi is of graceful shape, a cone with the apex downwards; this leaves but little of the hot, oily, and high-smelling tobacco at the bottom, whereas in Europe the contrary seems to be the rule. In Ujiji the bowl is small, rounded, and shallow; it is, moreover, very brittle. The most artful "mtemba" is made by the people of Uvira: black inside, like other pottery, its exterior is coloured a greyish-white, and adorned with red by means of the Indian geru* (Colcothar or Crocus Martis). Bhang is always and tobacco is sometimes smoked in a water-pipe: the bowl is of huge size, capable of containing at least half a pound, and its upper half is made to incline towards the smoker's face. The Lakist tribes have a graceful variety, like the Indian "chillam," very different from the awkward, unwieldy, and distorted article now fashionable in Unyamwezi and the Eastern countries. The usual pipe-stem is a tube of about 1·5 feet long, generally a hollowed twig of the dwarf melewele-tree. As it is rudely bored with hot wire, it must be made air-tight by wax and a coating of brass or copper wire; a strap of hairy skin prevents the pipe-shank parting from the stick. Iron and brass tubes are rare and highly prized; the fortunate possessor will sometimes ask for a single specimen two shukkah.

Basket-making and mat-weaving are favourite occupations in East Africa for both sexes and all ages; even the Arabs may frequently be seen absorbed in an employment which in Oman would be considered derogatory to manliness. The sengo, or common basket, from the coast to the Lake, is an open, shallow, and pan-shaped article, generally made of mwanzi, or bamboo-bark, reddened in parts and stained black in others by the root of the ukuruti and other trees, and white where the outer coat has been removed from the bamboo. The body, which resembles a popular article in ancient Egypt, is neatly plaited, and the upper ends are secured to a stout hoop of the same material. The kanda (in the plural makanda) acts in the interior as matting for rooms, and is converted into bags for covering bales of cloth, beads, and similar articles. It is made from the myara (myala) or Chamaerops humilis; the leaf is peeled, sun-dried, and split with a bit of

* It is called in Bombay "kao," an impure blood-red oxide of iron, in fact a kind of polishing powder like the European "jewellers' rouge." It is principally used for hammering into copper, and thus giving it a deeper tinge.

iron into five or six lengths, joined at the base, which is trimmed for plaiting. The Karagwah, the only mat made in the interior of Africa, is used as bedding and carpeting; on journeys the porters bivouac under it; it swells with the wet, and soon becomes impervious to rain or heavy dew. It is of two kinds: one of rushes growing in the vicinity of water, the other of grass rolled up into little bundles. A complicated stitch runs along the whole length in double lines. The best description of mat is called mkeke. It is made at Zanzibar and the coast from the young fronds of the ukhindu or brab, neatly stained with various dyes. Women of family pride themselves upon their skill in making the mkeke, which attains a price of 4 dollars. Amongst the maritime races none but the chiefs have a right to sit upon it; there are no such distinctions in the interior, where these mats are carried for sale by the slaves. From the brab also are made neat strainers to purify honey, pombe, and similar articles. They are open-mouthed cylinders, from one to two feet long, and varying in diameter from three to six inches. The bottom is narrowed by whipping fibre round the loose ends of the leaves. The fishing-nets have been described when treating of the Tanganyika. The luávo, or hand-net, is made of calabash or other fibre, with coarse wide meshes; it is affixed to two sticks firmly planted in the ground, and small animals are driven into it by beaters.

The basts or barks and fibrous substances in East Africa are cheap and abundant, but labour and conveyance being difficult and expensive, they would require to be shipped from Zanzibar in the condition of half-stuff. The best and most easily divisible into pliant and knot-tying fibres are upon the coast the pineapple, and in the interior the plantain. The next in value are the integuments of the calabash and the myombo tree. These fibres would produce a good article were it not for the artlessness of African manipulation. The bark is pounded or chewed, and, in lieu of spinning, is twisted between the hands; the largest ropes are made in half an hour, and break after a few minutes of hard work. A fine silky twine, used for fishing, is made from the aloetic plant called by the Arabs masad* and kideh. The leaves are stripped of their coats, and the ends being tightly bound between two pieces of wood, the mass of fibre is drawn out like a sword from its sheath. Fatilah, or matchlock matches, are made in Zanzibar of cotton, and in the interior of calabash fibre.

As might be expected amongst a sparse population leading a comparatively simple life, the vast variety of diseases which afflict

* Also known in Arabia as "bag," and to the Wasawahili as "mkonge." It is the hig or haskul of Somaliland, where it affects the poorest ground, cannot be burnt down, and is impassable to naked legs and cattle.

more civilized races, who are collected in narrow spaces, are unknown in East Africa even by name. Its principal sporadic is fever, remittent and intermittent, with its multitudinous secondaries, concerning which notices have been scattered through the preceding pages. The most dangerous epidemic is its aborigen, the small-pox,* which, propagated without contact or fomites, sweeps at times like a storm of death over the land. For years it has not left the Arab colony at Kazeh, and, shortly before the arrival of the Expedition, in a single month 52 slaves died out of a total of 800. The ravages of this disease amongst the half-starved and overworked gangs of caravan porters have already been described; as many as a score of these wretches have been seen at a time in a single caravan; men staggering along blinded and almost insensible, jostling and stumbling against every one in their way; and mothers carrying babes, both parent and progeny in the virulent stage of the fell disease. The Arabs have partially introduced the practice of inoculating, anciently known in South Africa; the pus is introduced into an incision in the forehead between the eyebrows. The people have no remedy for small-pox: they trust entirely to the vis medicatrix. There is a milder form of the malady, called shúrá, resembling the chicken-pox of Europe; it is cured by bathing in cold water and smearing the body with ochreish earth. The Arab merchants of Unyanyembe declare that, when they first visited Karagwah, the people were decimated by the tâun, or plague. They describe correctly the bubo under the axillæ, the torturing thirst, and the rapid fatality of the disease. In the early part of 1859 a violent attack of cholera, which extended from Maskat along the eastern coasts of Arabia and Africa, committed terrible ravages in the island of Zanzibar and throughout the maritime regions. Of course, no precautions of quarantine or cordon militaire were taken, yet the contagion did not extend into the interior.

Strangers in East Africa suffer from dysenteries and similar disorders consequent upon fever; and, as in Egypt, few are free from haemorrhoids, which in Unyamwezi are accompanied by severe colics and umbilical pains. Rheumatism and rheumatic fever, severe catarrhs and influenzas, are caused by the cold winds, and, when crossing the higher altitudes, pneumonia and pleurisis abound in the caravan. On the coast many settlers, Indian and Arab, show upon the skin whitish leprous spots, which are treated with various unguents.† In the interior, though well provided with fresh meat and vegetables, travellers are

* According to our earlier travellers, small-pox was not indigenous to the tribes of Kafirland.

† Similarly, the Bushmen of S. Africa treat leprosy with the fat of the hippopotamus, and the negroes of the Mauritius with coco-nut oil.

attacked by scurvy, even in the absence of its normal exciting causes, damp, cold, and poor diet. This phenomenon has often been observed upon the upper course of the Nile; Europeans have been prostrated by it even in the dry regions westward of the Red Sea, and the Portuguese officers* who explored Usenda of the Kazembe suffered tortures from the complaint.

Common diseases amongst the natives are umbilical hernia and prolapsus: the latter is treated by the application of powdered bhang, dry or mixed with ghee. They are subject to kihindu-hindu—in Arabic, sara—the epilepsy, which they pretend to cure by the marrow of rhinoceros' shank. Of the many fits and convulsions which affect them, the kichyoma-chyoma is the most dreaded. The word, which means the “little irons,” describes the painful sensations, the cramps and stitches, the spasms and lanchinations, which torment the sufferer. Many die of this disease. It is not extraordinary that the fits, convulsions, and contortions which it suddenly induces should lead the people to consider it in the light of possession, and the magician to treat it with charms. Madness and idiocy are not uncommon: of the patient it is said, “Ana wazimo”—“he has fiends.” In most parts the people, after middle age, are tender-eyed from the effects of smoke within, glare without, exposure and debauchery. Not a few samples of acute ophthalmic disease were seen.

In the lower and more malarious spots, desquamations, tumours, and skin diseases are caused by suddenly suppressed perspiration. The terrible kidonda or helcoma of the maritime regions and the prurigo of Ujiji have already been alluded to. The “chokea” is a hordeolum or large boil, generally upon the upper eyelid. The “funza” is supposed to result from the bite of a large variety of fly. It begins with a small red and fiery swelling, which bursts after a time and produces a white entozoon about half an inch in length. “Kumri” are common blains, and “p'hambazi” malignant blind-boils, which leave a deep discoloured scar; when the parts affected are distant from the seat of circulation, the use of the limb is sometimes lost. For most of these sores tutiya or murtutu, blue-stone, is considered a specific.

As might be expected amongst an ignorant and debauched race coming in direct contact with semi-civilization, the lues has found its way from the island of Zanzibar to Ujiji and into the heart of Africa. It is universally believed both by the natives and by the Arabs, who support the assertion with a host of proofs, to be propagated without contact. Such, indeed, is the general opinion of the Eastern world, where perhaps its greater virulence may

* In ‘O Muata Cazembe,’ the author of the Portuguese Expedition mentions that “fortunately he had no medicine,” and that after severe sufferings from scurvy he was cured by a negro.

assimilate it to the type of the earlier attacks in Europe. The disease, however, dies out, and has not taken root in the people as amongst the devoted races of North America and the South Sea islands. Although a malignant form was found extending throughout the country, mutilation of the features and similar secondaries were not observed beyond the maritime region. Except bluestone, mineral drugs are unknown, and the use of mercury and ptyalism have not yet exacerbated the evil. The minor form of lues is little feared and yields readily to simples; the consequences, however, are strangury, cystitis, chronic nephritic disease, and rheumatism.

"Polypharmacy" is not the fault of the profession in East Africa, and the universal belief in possession tends greatly to simplify the methodus modendi. The usual cathartic is the bark of a tree called kalákalá, which is boiled in porridge. There is a great variety of emetics, some so violent that several Arabs who have been bold enough to swallow them, barely escaped with life. The actual cautery—usually a favourite counter-irritant amongst barbarous people—is rarely practised in East Africa; in its stead powder of bluestone is applied to the sore or wound, which has been carefully scraped, and the patient howls with pain for hours. They bleed frequently as Italians, who even after being startled resort to a mild phlebotomy, and they cut down straight upon the vein with a sharp knife. They love cupping like the Arabs, who say,—

" Few that cup, repent ;
Few that bleed, rejoice."

A favourite place is the crown of the head. The practitioner, after scarifying the skin with razor or dagger, produces a vacuum by exhausting the air through a horn applied with wetted edges; at the point is a bit of wax, which he closes over the aperture with his tongue or teeth, as the hospital "singhi" in India uses a bit of leather. Cupping—called *ku humíká*—is made highly profitable by showing strange appearances in the blood. They cure by excision the bite of snakes, which, however, are not feared nor often fatal in these lands. They cannot reduce dislocations, and never attempt to set or splint a broken bone.

The *mganga* or medicine-man, in his character of "doctor," is a personage of importance. He enters the sick-room in the dignity of antelope-horn, grease, and shell-necklace, and he sits with importance upon his three-legged stool. As a "devil" saves him the trouble of diagnosis, he begins by a prescription, invariably ordering something edible for the purpose, and varying it, according to the patient's means, from a measure of grain to a bullock. He asserts, for instance, that a pound of fat is required for medicine; a goat must be killed, and his perquisite is the head or breast—a pre-

liminary to a more important fee. Then the price of prescription—a sine quâ non to prescribing—is settled upon and paid in advance. After certain questions, invariably suggesting the presence of poison, the medical practitioner proceeds to the cure; this is generally a charm or periapt bound round the part affected. In common diseases, however, like fever, they will condescend to such profane processes as adhibiting sternutatories and rubbing the head with vegetable powders. If the remedies prove too powerful or powerless, the mganga at once decamps; under normal circumstances he incapacitates himself for performing his promise of calling the next day by expending his fee in liquor. The Africans have in one point progressed beyond Europeans: there are as many women physicians as men.

CHAPTER XV.

CATTLE, CULTIVATION, AND CARAVANS IN EAST AFRICA.

CONCERNING the wild Fauna of the country, a few desultory notices have been scattered in the preceding pages. East Africa, it may be observed, wants the variety of species which distinguish the southern regions of the peninsula. There are, it is true, spots that show the finest sport, but, as a rule, the haunts and watering-places of wild animals are deserts through which the traveller must hurry, flying from hunger and other perils. In the more populous parts game has melted away before the woodman's axe and the hunter's arrow: even where large tracts of jungle abound with water and forage, the note of a bird rarely strikes the ear, and not a head of game will be seen during a long day's march. Briefly, this portion of Africa is a remarkable contrast to the line traversed by Dr. Livingstone, where the animals standing within bow-shot of his weapon were so plentiful that the burden of provisions was unnecessary. The birds are scarcely more numerous than the beasts; they are characterised by dulness and sombreness of plumage, and they are noisy but not harmonious, unpleasant because strange to the European ear.

The tame animals, which form a considerable item in the list of the East African's possessions, require some detail. Black cattle will not exist upon the coast from Mombasah to Kilwa, except about Konduchi and its adjacent islets: they cannot live in Uzaramo and Khutu, and yet they are found upon the Pangani River, at a few miles distant from the sea. The people attribute this phenomenon here to brackish water, there to a poisonous grass: the animals die, according to the Arabs, sometimes from entozoa in the liver, at other times from an eruption like smallpox, accom-

panied with frothing at the mouth, and ending fatally after the third or fourth day. Of a herd, even when kept on the seaboard for a few weeks, many will be lost, and only change of air will save the rest. It may be remarked, however, that no cattle are found in the low and marshy central tracts which form the kingdom of the Kazembe : the deficiency should, therefore, be attributed to climate rather than to a merely local accident. Moreover, from the specimen brought home by the Expedition, it is evident that the tsetsé, so fatal to all the bovine and equine race, has not died out of the land.

In East Africa, as in India, the coupling season commences before the monsoon-rains, and the cattle generally bring forth in the early days after the masika. No care is applied to breeding, and whatever excellence there is in the animals must be attributed solely to the abundance of pasture. Cattle are not ridden in these lands ; and the remarkable African breeds—the long-horns of the Gallas and the South African tribes, and the loose-horns of Abyssinia and Kafirland—do not apparently extend to these regions. The people moreover do not, like most pastoral races, mark, dye, or otherwise ornament their animals.

On the line of road followed by the Expedition no herds were seen eastward of the central heights of Usagara. On those mountains the cattle are small, humped, and exceedingly lean during the dry season ; after the rains, when forage abounds, they become as fat as they before were thin. In Ugogo there is a demand for cattle, and cows fetch from 3 to 5 doti. The breed of Unyamwezi is larger and finer than those to the east : stallions were seen rivalling in size the far-famed produce of Guzerat : the oxen also are fat and well-grown. The common variety is a short-backed, round-barrelled, and large-humped animal : there are many shades of colour—black and white, dun and yellow, brindled, speckled, and striped ; the most remarkable is an ashy blue. The cattle of Ujiji, Uhha, and Karagwah is a large-horned and small-humped species, with a uniform dun coat : the Arabs of Zanzibar compare them with the English cow.

In Eastern and Central Africa cows are never stalled. They are driven out during the day, apart from the calves ; they are watched and guarded by spearmen, and the herd is kept together by the tinkling of an iron or a wooden bell. They are milked at different times by different tribes—in the morning, at noon, or before sunset. It is everywhere a man's work, as amongst the ancient Egyptians and the modern Ababdeh ; and it is an art in these lands. Though the cow's legs are tethered to prevent kicking, she abhors and resists a strange hand, and yields willingly even to her own milkman only after the calf has been allowed to suck. If the young one dies, she often refuses her produce :

for economy, however, in some parts, a kid is taught to assist in the operation. No grain is given in the less fertile countries ; the animals subsist for half the year on rank grass, and for the other half on hard stubble ; the udder is consequently rarely distended ; the yield is about one quarter that of an average European cow, and it ceases to flow on the third or fourth month after parturition. The milk also is of the poorest and most insipid quality, and the butter is white, like that of the camel. The half-tamed bulls cannot be driven apart from the herd ; they run away, charge furiously as wild buffaloes, and, when mortally wounded, seldom fall till hemorrhage has extended throughout the interior. Even the cows give considerable trouble on the road ; they begin by trying to escape, and they end by straggling from the line of route. To prevent the calves pulling at the udder, it is smeared with cow-dung : this handy, though unclean, shift is of little use in lands where every man is a thief of milk, and where muzzles and tethers would certainly be stolen. Herds are driven down to the coast by almost every caravan ; the cattle fall off greatly during the march from the change of air and water. In good pasture-lands the beef is fat and well-flavoured.

In East Africa the mbuzi or goats are of two species : one is the common Arab breed, small, plumply-rounded, and neatly-formed as an antelope ; the other approaches the type of a wild animal ; the skin is a dark dun, with black-brown points, and the beard is long, waving, and jetty. The latter variety is rarely found near the coast, more often in Unyanyembe, and westward to the Tanganyika Lake. Goats are sometimes castrated, but the kid is seldom eaten : the wild man prefers the flavour of the full-grown, on the principle that he chooses an old cock rather than a tender chicken. The khondo'o or sheep is of two kinds, like the goat. The African animal somewhat resembles that of Western Arabia : it is generally of an oakum colour, with a long tail, broad at the clunes, and tapering off : strangers compare it to a dog. The other variety, like that of Somaliland, is clearly an importation from Central Asia. In these countries, however, it degenerates : the large knotted tail becomes a short, ragged flap, the pure white coat becomes blotched and stained, and the head loses its "castey" appearance. Sheep are rarely castrated, and are little prized even by the African : the only test of condition is the fulness of the caudal region. Upon the coast and in the interior mutton fetches only two-thirds or, if in bad condition, one-half the price of goat's flesh. The skin also is useless ; it tears like parchment.

Besides man, there is no animal of burden throughout this country except p'hunda or asses. A few are found in Ugogo ; the chiefs, their proprietors, will however rarely sell them. A greater

number are bred in Unyanyembe, where they cost from 2 to 5 cloths each; and the Arabs sometimes cross the mares with the Omani ass, and demand as much as 60 dollars for the produce, which is improved in shape and stature. The principal mart is amongst the wild pastoral tribe of Wataturu, who sell them for 4 fundo of beads to 1 doti per head: some Arabs have laid in a stock for transporting to the coast, where they command a price of 10 dollars. In the maritime, as in the central Lakist regions, the ass is almost unknown. The animal is imported into Zanzibar island from Oman and from the Barr el Banadir: the Arab breed used for riding can rarely be purchased under 30 dollars, whereas the African ranges from 4 to 10 dollars.

The ass in this part of Africa resembles the Somali and Wamasai breeds: it shows so few varieties of form and colour that it appears as if lately reclaimed from a wild state. It has almost invariably a grey, fawn, or mouse tint, with a silvery belly and a brown-black cross along the back, and extending down the shoulders; the tail, the lower legs, and the ears, which are often slit or shorn of their tips, to serve as marks,* are also dark. The head is large and coarse, and the neck thick: they are small, short-backed, and round-barrelled, with the stiff, upright pasterns of a goat, and their deficiency of length in the leg renders them bad steppers.

These animals are never ridden by the people, although the example has for years been set by the Arabs. Equipped with neat saddlebags of bullock's, zebra's, or giraffe's skin, lashed to the bare back—the pack-saddle being still unknown to the African—they are lightly laden, and are driven to and from the coast. Soft, and displaying no signs of blood, they cannot long carry heavy burdens,† and they are sometimes worn out even when marching without packs; if over-worked they seem to break their hearts. From the force of habit they must drink every twenty-four hours, or they will try back to the last watering-place; the Somal breed endures thirst without much suffering for three days. They live upon the coarsest fare, but they require almost perpetual feeding. They suffer severely from the sun, and avoid it by rushing under trees and bushes, whence they must be dislodged with a shower of blows: walking in the mud causes the frog to rot; the disease, however, is easily removed by the Arabs with brimstone and lime-juice. They are slow and sluggish, stubborn, headstrong, and contradictory: they invariably select the worst and

* Some tribes brand their animals, as a distinction, in the breast.

† They are deficient rather in endurance than in muscular strength. The usual load for an ass on a long journey is about 60 lbs. Two Wanyamwezi animals carried for some weeks 200 lbs. of dead weight over rough ground: they died, however, soon after the march.

most dangerous paths, and are sometimes so vicious that even castration effects no cure. An ass, unless following a line, always requires the attendance of at least one man to lead him ; and if a quick pace is wanted, he must be followed by another. The animal is long in recovering from a severe march, and often dies in consequence : disease was observed to manifest itself by a tumour in the stomach, not unlike the base of a camel.

The horse rarely lives long in the island of Zanzibar, and is not found upon the opposite line of Eastern Intertropical Africa. To judge from the scanty experience of the Arabs, the animal cannot be acclimatised in the interior. The Shaykh Snay bin Amir, of Kazeh, brought two into the country—one, an Omani, died after a month's march, at the Mukondokwa River, of a disease resembling the peripneumonia, or horse-sickness of the Cape ; the other, a Somali, survived nine months, and perished upon the hills of Karagwah. This African breed, inured from early age to rough treatment and to hard fare, of course outlives the delicate and well-fed Arab. The mule, on the other hand, to judge from the analogy of climate, might be expected to thrive : as yet its name is unknown. The Ngamia or camel has not yet been introduced into Unyamwezi, though it will exist in the lands of the Wamasai northwards, and in the Mozambique to the south. In the island of Zanzibar, and on the coast as far as Kilwa, the animals are used for turning mills ; they are poor and mangy specimens imported from the Somali country and the Barr el Banadir. The price varies from 10 to 30 dollars.

The poultry of Unyamwezi is as superior to the unsavoury produce of India as it is inferior to the cooped and crammed poulard of civilised lands : in the other provinces it is comparatively hard, thin, and tasteless. The birds are so inactive that they naturally incline to fatness, an excellent thing in poultry ; they seldom stray beyond the village, and, being short of breath, are caught after a few minutes' run. The traveller can generally command a meal of the meat most fitted to the climate, and least likely to pall upon the palate : the flesh of fowls in these lands is amongst animal food what bread is to vegetable diet. The best-flavoured bird is perhaps a sitting hen. Of the several breeds of fowls, the most common resembles in form and plume the Spanish red-and-brown bird ; some are beautifully painted with golden hackles over a purple-black coat. Others, much prized by strangers, are short-legged as ducks, with large and heavy bodies : the variety, though now permanent in these lands, appears accidental ; though in South Africa the Boers have artificially produced a similar breed for facility of catching the bird. Another race, which abounds in Ugogo, and is scattered throughout the country, has a shock-coat of feathers, apparently reversed, which shade the skin

without increasing the heat. Dr. Livingstone (chap. xx.) observed this species in West Africa, where it is called the "arripiada," or shivering, by the Portuguese, and kisafu by the pagans, who use it in sacrifice. All these animals show little blood; their eyes are red, their combs large and deeply jagged, and their legs scaly and of a dirty brown. Many have a thickening of the skin about the shank, and not a few are so weak that they prefer sitting to standing. Game-cocks are unknown: the animals rarely fight for more than five minutes, and, after a little sparring, they edge away by mutual consent. The capons, which are also the best for eating, have a most luxuriant plume, and seem to fight almost as well as the cocks.

The domestic goose was not seen in the country; the Arabs, however, have introduced from Zanzibar the Manilla or Muscovy duck. This bird attains a large size in the damper climates of Uzaramo and Usagara, and it thrives well in the regions about the Tanganyika. In Unyamwezi it suffers from want of water. Everywhere, however, the flesh is tough and tasteless—palatable only when converted into hams. Pigeons are reared for food throughout the country, and are somewhat dearer than fowls: they are kept either in the dwelling-houses, or in neat low huts built for them in the squares and open spaces of the villages.

The dog is found amongst all the tribes of East Africa. Man's companion here acts as a guard to the hut, and is led about and petted in all things except where food is in question. The hunting tribes train their curs to attract by sound and smell the attention of the larger game. These animals leave all noise to the village cocks; they sometimes howl, but rarely bark, favouring the opinion that this sound is an effect of long domestication,—in fact, an attempt to imitate the human voice. The common animal—the "King Suphis breed" of ancient Egypt—is a small variety of the pariah or "wolf-dog" of India and the East. They are curly-tailed and prick-eared; the coat is yellow, liver, and white, black and white, or dun-coloured, and, stunted by hunger, they rarely rise higher than 20 inches. In Ugogo an animal was seen resembling the pariah, but with comparatively long and rough hair like a terrier. The dog in Uganda is a nobler breed: the Arabs describe it as a suluki or greyhound, but, to judge from their description, it appears to be a kind of lurcher. In the north of Unyamwezi, and in the island likewise, the dog is said to be of superior race. In Kitui, a province about 14 marches north-west of Mombasah, dogs are valued at 6 dollars in cloth and beads. Red and white dogs are eaten by the people of Usumbara during matanga or mourning for the dead, and a canine skin planted upon a pole before the house of the deceased is a signal of its being deserted. The dogs of Ubena are often purchased by the

Arabs; they are tall and unlike the pariah breed, with short drooping ears, a long oakum-coloured or black and white coat, and a feathered tail. Rabies was not heard of in East Africa.*

Agriculture throughout these countries is in a rude state. No negro Triptolemus has yet arisen to teach the use of "scarification" by the plough. The fertility of the country depends solely upon the abundance of the monsoon rain, and the people, impatient of toil, will not work at hard ground. When the heavy showers have ceased to drench the earth, and its copious crop of weeds and jungle shrubbery has begun to dry, the land is fired to save the trouble of weeding and to act as manure. When not burned, a single clearing is deemed sufficient, and the fields are soon overgrown with a wild vegetation which almost chokes the good seed. About a month before the masika, when, under the influences of the cooling temperature and the "sowing rains," trees begin to bud, beasts to pair, and birds to nidify, the peasant, shaking off his wonted indolence, seriously applies himself, with his family, to the task of cultivation. In some parts of the country they labour in gangs, each in his turn providing the rest with pombe and flesh till his fields are ready. Amongst the semi-pastoral tribes men disdain to work the ground. The fields are rudely cleared of the largest weeds, but the last year's cane-stubbles are often, unless burned, allowed to encumber them. The ditches or holes sunk in the margins of fields for drainage are deepened, and the enclosures, which in the more civilized parts are solid stockades or neat snake-fences of entwined branches, are repaired. The people are cunning in irrigation: the fertilizing fluid is distributed over the fields by small watercourses, which, as in the East generally, are hollowed lines of raised earth conducted to a considerable distance, the levels being laid out by the eye. In some basins, where the streams are perennial, the crop is no sooner reaped than another is sown. The land is often allowed, especially after the failure of a harvest, to lie fallow, and the people say, "Why again waste our grain here?" After a few years the decay of leaves and vegetable matter restores it to its pristine productiveness.

The implements of agriculture are simple in the extreme. The simple scratching of the soil answers all the complex and tedious processes required in northern lands. The place of the plough, the harrow, and the spade is supplied by the jembe or hoe. In the island and upon the coast of Zanzibar it is like a child's plaything, with an adze-like iron, hardly three fingers in breadth,

* Dr. Livingstone (chap. vi.) endorses from partial observations in S. Africa "the prevailing idea of hydrophobia not existing within the tropics." If such an idea ever existed, it certainly has not prevailed in Indis, where several officers have fallen victims to rabies.

attached to a handle about a foot long. In Usagara it is triangular, and the long projecting point or tail is inserted into the club-like head of a solid broomstick. The jembe of Ugogo and Unyamwezi is a heart-shaped iron, about 10 inches long, with a prong projecting from the upper part; at Kawele, the district south of Kazeh, it is nearly double that size. The hoe is manufactured in the interior, and is carried down by caravans to the coast; it thus becomes a circulating medium amongst the races on the great trunk line, and is taken in exchange for provisions and in payment of blackmail. In average years two of these articles are procurable for a cloth in Unyanyembe, and become worth double that price in the regions lying between the Land of the Moon and the eastern seaboard. On the island and coast of Zanzibar the people use a msaha or dibble, a chisel-shaped bit of iron, with a socket to receive a wooden handle about two feet long; this, however, is unknown in the interior. Grain is cut with a sickle, derived probably from ancient Egypt, and resembling that of modern Europe.

Eastward of Rumuma in Usagara the seed is sown in hoe-pits. The labourers, male and female, perambulate the fields, striking here and there, apparently without regularity, their heavy triangular and pointed hoes; at the end of the operation the surface appears dented with gashes from 3 to 4 feet distant from one another. In each of these holes five or six grains of "maslin" or mixture—holcus, maize, bajri, sesamum, and ground-nuts—are buried; in fact, a number sufficient to ensure some growth where a single seed would not be trusted. Thus it is that the plants often rise in heterogeneous bunches which astonish the stranger's eye. Westward of Rumuma, as far as the Lake Tanganyika, the fields are neatly ridged with the hoe, and show furrows which might be mistaken for the work of the plough. Diminutive enclosures are chosen, because thus the best patches of ground are secured; moreover, the work looks less to the lazy labourers. The husbandman, though generally he prefers maintaining the majesty of man by reclining in the shade whilst the women and the girls toil in the sun, may at sowing-time be seen digging with his hoe little holes in the lower furrows; he is followed by his wife, who plants the seed, and he retraces his steps to cover it.

The grain is reaped after the masika, and is carried to a threshing-floor which has been cleaned and hardened with a coat of cowdung. Men, women, and children then collect, and, armed with long sticks of every shape, beat out the crop. The threshing implements are of less artful form than those of Harar and Southern Abyssinia, which are curved at the end for greater power and extent of percussion. The grain is then stowed away, with scant winnowing, in lindo, or large cylindrical bins of tree-bark,

which when intended to last through the year are carefully luted and coated with clay. From these bins, which are placed in the inner rooms or at the side of the hut, the women take out rations of grain when wanted. The last operation to fit it for cooking is husking in a large wooden mortar and reducing to flour upon a rough granite slab.

The principal cereals of the country are sorghum or the larger millet, bajri or the lesser millet, rice, maize, and "nagli;" as has been remarked, wheat, which refuses to grow upon the island and the coast of Zanzibar, flourishes in the higher and drier regions of Unyamwezi.*

Sorghum or durrah, the natural model in these regions, is called by the Arabs of Zanzibar and Oman taam, and by the Wasawahili mtámá. Of this grain there are about twelve varieties; the white and red are the most common. Both are dry and heating; the Arabs declare that all the waters of Kausar—heavenly fountain—would not cool them; for this reason they are preferred by the unclothed population to rice, and the red variety, being the least digestible, is the favourite. Strangers at first suffer severely from the use of sorghum, which in these countries is never made into bread. The growth of this grain in East Africa evidences the fertility of the soil; in the Concan and Western India the ground must be prepared with various composts of stale fish and cowdung for its reception. Sorghum, like most other cereals, is sown before the rainy monsoon; it is reaped after five or six months, and consequently affords but one crop per annum. Upon the Mrima the jizlah of 60 lbs. is sold at harvest time—July and August—when cheapest, for 1 dol. 50 c., and attains a maximum of 6 dollars when the Banyans and the Arabs of Shahr have bought it up and caused an artificial famine. In the island of Zanzibar it fetches from 3 to 6 dollars per jizlah.

The panicum spicatum, called by the Arabs bajri, and by the African mawele, takes the place of sorghum in some regions. It is most abundant in Ugogo, Unyamwezi, Usukuma, and Ujiji. It is avoided by the Arabs as the hottest and heaviest of grain. The people of the country convert it into ugali or porridge. In Zanzibar island the price varies from 2 dol. 5 c. to 3 dollars per jizlah.

Rice is locally called by the East Africans, when in the paddy state, mpunga (Ar. shilb); mtele or mchele (Ar. rinz) when husked; and wáli (Ar. aysh) when boiled. It is everywhere a delicate grain, which depends, like the vine, upon some mysteries of soil and climate. As in India, it requires a regular, but not an over-

* Wheat, not requiring much moisture, is sown after rice, about the middle of the masika, and is reaped after the third (?) month.

copious water-supply : if the soil be too damp, the grain decays ; if too dry, the plant withers. Rice is indigenous to the African interior where visited by the tropical rains ; the native growth, however, is of the coarse red variety. There are many different kinds planted at Zanzibar and now introduced into the central regions by the Arabs. The best is the "sena," a white, light, and soft grain ; the "zira" resembles it, but is longer in shape. The "sindano" is small, short, and light. The "kinuk'hi" (the "scented," from *ku nuk'ha*, v. n. to smell) resembles the *jira-sal* of Western India, which is much admired on account of its peculiar musk-like flavour. The "devu" and "manjano" are larger grains, considered indigestible. Rice is sown once in the interior, shortly before the masika. In Zanzibar it is sown twice during the year, the first time about January and February, the second before the vuli or little autumnal monsoon ; the shoots are transplanted when they spring up too thickly, and the grain is reaped after a period varying from four to six months.

Zea Mays, locally called by Arab and African *muhindi* (*i. e.* the corn of India), grows throughout the interior, except in the driest regions. Where water is perennial, it may be planted at any season like rice. It is often raised twice a year, and it ripens in about three months. Green maize or young "corn-cob," the *buta* of Western India, is a great favourite with the people. The full-grown grain is considered cool and wholesome, but it is troublesome to prepare for food. It must first be steeped in water for twenty-four hours, then well pounded and ground, and afterwards, if intended for journeys, the flour must be exposed for three or four days to the sun, otherwise it soon ferments and turns sour.

The *Eleusine coracano*, or Indian *nagli* and *nachni*, called by the Arabs *dukhun* and by the Africans *uwimbi*, is a small reddish millet growing throughout the regions of Central Intertropical Africa. Made into thin scones, it is eaten with meat by the resident merchants, who consider it, however, a "dry food;" it is a favourite base of the sweet drink of the indigenes, called *togwa*. The *Phaseolus radiatus*—in India called *Urat* or *Mash*—is imported into East Africa.

The oleaginous growths generally known are the *sesamum* and the *arachis*. *Sesamum*, called by the Arabs *simsim* and by the Africans *ufútá*—a grain now valuable in the French markets, where "olive oil" is extracted from it—grows in considerable quantities about Lamu, the Banadir, and the southern maritime regions to Ngao. The cultivation might be extensively developed but for the shortsightedness of the barbarians, who fear to cheapen the article. It extends far into the interior, but it becomes scarcer and dearer in regular progression from the coast. At Zanzibar its value varies from 12 to 15 *kayla* (each of 6 lbs.),

and, when in least demand, from 15 to 18 kayla per German crown. On the coast the same sum will purchase 20 kayla. In Khutu it is rare and dear; the price is 25 cents, or its equivalent a white cloth, for 4 or 5 kayla. In Unyamwezi and Ujiji it is the most expensive of grains, only from 8 to 10 kayla being procurable at times for the shukkah. It is cheapest at Ngao (Monghou) and in the southern parts, where the dollar will purchase from 20 to 30 kayla. At Zanzibar it rises to 6 kayla per dollar.

The *Arachis hypogaea* is the bik'han or bhuiphali, the earth-fruit of Western India, and the ground-nut and pig-nut of Southern and Occidental Africa: it is called njugu ya nyassa on the East African coast; in Unyamwezi, karanga or k'haranga; and in Ujiji, mayowwa (pl.) and mwanza. The Indians employ it extensively in confectionary for almonds, of which it has a faint taste: the Africans use it principally on journeys, when it is eaten boiled or toasted, and for extracting oil. The Arabs have introduced the refinement of frying it with cream that has been slightly salted. The plant runs along the surface of the ground, and puts forth fruit at intervals below: it is sown before the rains, and ripens after six months—in the interior about June. The price greatly varies according to the abundance of the article: in Ujiji, where it is moderate, about 2 lbs. may be purchased for a khete of coral beads.

The principal pulses, besides the various kinds of beans alluded to in the third chapter, are the *Phaseolus*, the *Cajanus*, and the *Voandzeia subterranea*. The *Phaseolus mungo*, called by the Arabs el munj, from the Indian "mung," grows but partially in Eastern Intertropical Africa: it is not found about Uvinza and near Ujiji. It is considered a cooling food, and, curried with rice, it is a favourite with the Arabs. The *Cajanus Indicus*, the doll-plant of India—in Arabic, turiyan (a corruption from the Indian "t'hur"); and in Kisawahili, mbárázi—is also rare beyond the coast. Like mung, it enters largely into the popular Arab dish called kichhri, rice and pulse boiled together and buttered. The *voandzeia* is known to the Arabs and coast class by the name of njugu ya máwé ("of the stones," on account of its hardness), and in Unyamwezi p'hánde: it extends along the coast to the Mozambique,* whence it is imported to Maskat and to Goa in Western India; the Indians call it chana ("gram"), and the Portuguese graõ de Africa. It is a small round-oval bean, subterraneous, as is the ground-nut, and striking straight down like the potato: in these lands there are apparently two varieties—the one a whitish-yellow,

* It may flourish as far south as Kafirland. Dr. Livingstone (chap. xxxi.) describes a grain which he calls "litloo" amongst the Bachwanas, which appears to be the *voandzeia*.

the other a dark-red, often deepening to black. The common chana or gram of India (*Cicer arietinum*) is unknown in East Africa.

As the traveller advances westward he observes that increasing rain produces a greater variety and abundance of esculent vegetables. In the preceding pages notices have been given concerning the growth of pumpkins, gourds, and other cucurbitaceous plants, together with those of more local growth, onions and sweet-potatoes, cucumbers and water-melons, turmeric and egg-plants. Remain for consideration the manioc, Jerusalem-artichoke, yam, tomato, arrowroot, mushroom, and bird-pepper.

Manioc (*Jatropha utilissima*), known to Arab and African by the name of "muhogo" (in the plural *mihogo*), is in the island of Zanzibar, and in parts of the interior, what the potato was to Ireland but a few years ago. Though capable of bearing drought, it is long before coming to maturity; in the most fertile soils, and those well watered by rain or inundation, it grows luxuriantly, waving its broad palmated leaves over hill, dale, and plain far as the eye can see. Throughout the line between Zanzibar and the Tanganyika Lake the manioc is of the sweet variety, which requires no washing. In Usui and the provinces north of Unyanyembe it is said to be poisonous: before using it the people wash it in water for several days and sun-dry it. This is probably the black and bitter manioc of West Africa and of the New World, where its manipulation is long and tedious.

Little care is given to cultivating muhogo, though, like the plantain, the coco, and the date-palm, every part of it is capable of utilisation. It is planted in cuttings or stalk-stocks, about 18 inches long, at intervals of 3 or 4 feet, and the ground is rarely weeded unless wanted for a second and a different semence. The height of the shrub, like the size of its root, varies with the soil: it attains a maximum of 8 feet; the leaves are eaten by cattle, and the people use the wood for fuel, though they ignore its potash-producing properties. The largest root is about 2 feet long, fusiform, and as thick as a man's forearm; of these, the plant rarely bears more than three or four; when smaller, the number will extend to eight or nine.* The cuttings sprout after the first fortnight, and the full size is attained after the average of a year: it is edible during the fifth month, but at that time, like an unripe potato, it is hard, waxy, and unfit for farination; if left too long, it becomes fibrous and stringy. The price in the interior varies, but, as a rule, it is cheaper than grain.

The Arabs complain that muhogo is heavy and heating: according to them a full meal eaten in the morning is not digested till

* The white manioc has been transplanted to Goa in Western India, but it requires nearly three years to ripen, and even then it seldom bears more than two or three roots.

night. Dr. Livingstone charges it with not satisfying hunger, causing coughs and expectoration, and not giving stamina to the system. This is not the case in East Africa, where, if, as that traveller supposes, its abundance of glutinous matter produces blindness, as in animals fed upon pure amylaceous substances, the people of whole regions would lose sight. It is subjected to a variety of preparations. The poorer classes and travellers pare the root and devour it raw, as turnips are eaten by schoolboys : the taste is not unpleasant, but the effect upon any but the *dura ilia* of an African is often a violent colic. Peeled, sun-dried, pounded in a mortar, and mixed with, and stirred in, boiling water, it is converted into ugali or porridge. Like the farinha or "wood-meal" of West Africa, it is washed, rasped, and toasted upon an iron griddle ; the people of these lands, however, ignore the art of converting it into tapioca. They roast, boil, and bake it when in a fermented state, or eat it simply boiled like potatoes, or thrust it into hot ashes to form "greeshen." Cut longitudinally into thin slices, and fried with butter, it was found a by no means despicable substitute for toast ; and it can be converted into potato-fritters by being cut into wafery circles and placed in the frying-pan. It soon palls, however, upon the European palate. The Arabs, after extracting the central fibre, pound it to a fine powder, and eat it as paste with fish ; mixed with the juice of the ground-nut, and flavoured with meat, it becomes a rich and savoury vegetable.

A variety of the Jerusalem-artichoke (a *Helianthus*), called by the Africans nyumbu, abounds in Unyamwezi, and near the Tanganyika Lake : it is a favourite with the Arabs, in whose country it is unknown. Though growing almost wild, the root is one of the best of vegetables ; it is fusiform, resembling in shape a long, thin, white radish, and in taste superior to the "guignon" or white arum of northern India. It is best during the rains ; during the droughts it loses flavour, and becomes hard and stringy.

The yam (*Dioscorea*) is called kyazi kikú (in the plural viyazi vikú), or the "large sweet-potato." It is found in the well-watered parts of the country, though rarely in abundance. The yam is smaller than that of India and Zanzibar ; it is, however, superior in taste, as it has little of that medicinal flavour so disagreeable to strangers. The Wajiji eat a kidney-coloured triangular vegetable, which, according to them, is the tuber of the yam (?) : it is remarkably insipid.*

* Mr. Lyons McLeod, F.R.G.S., and, lately, H. B. M.'s Vice-Consul at the Mozambique, mentions a "three-sided vegetable growing on a climbing plant trained over trellis-work." He adds that the "plant is an annual, produced from the fruit, which is triangular, of a dark chesnut colour, in taste resembling a potato. The Portuguese call it by the generic name—batata."

The tomato, unknown to the Arabs of Oman, is called nyányá by the Africans ; it is indigenous to parts of this country as to the inner Mozambique, where the officers attached to Captain Owen's survey frequently found it. In these lands it is allowed to grow wild : it was observed in the vicinity of Msene, about Ujiji, and at Umunda and Msalala, north of Unyanyembe. The fruit is small, sometimes not exceeding the size of a musket-ball ; its subacid flavour is however grateful, and the Arabs relish with it their marak or soup.

Arrowroot (*M. arundinacea* ?), called uranga or uwanga, grows like a grass on the island of Zanzibar, in the maritime regions, in Unyamwezi, Uvinga, and Ujiji : it is gathered at the end of the rains, before the withering of the raceme. It is pounded or ground upon a stone, and then strained, with seven changes of water, through a cloth tied at the four corners, into a pot placed beneath. The fine powder, after subsiding, is separated by pouring off the water, and, thus having lost all its bitterness, it is whitened in the sun. Arrow-root is supposed to be poisonous before washing, and after it to become cold and astringent, according to the Arabs, who use it in visceral diseases. The fecula is a favourite substitute for wheat in confectionery, and in such dishes as faludaj or starch pudding ; the slaves at Zanzibar make it into little balls like musket-bullets and boil it in tembo or toddy.

Mushrooms are called by the African uyoga :* during and after the rains fungi of various colours, shapes, and sizes appear in the damper regions. One is a large white toadstool, which tops like snow the grass-green hillocks, and is greedily eaten by the people. Another is like our common agaricus, an umbrella-shaped disc, lined with a reddish-brown. There is a subterranean variety which experts discover by tapping the ground with a stick ; and a fourth, which is said to possess intoxicating properties. Mushrooms are generally eaten boiled with salt ; several accidents, however, are related to have followed a full meal of this vegetable. A fundi declared that he and his followers, a small caravan of ten men, after a full feed of mushrooms, lost the use of their limbs for upwards of a week.

The small variety of *C. baccatum* (?) called in India bird-pepper, grows spontaneously throughout the maritime regions, Unyamwezi and Ujiji ; it is neglected by the people, who do not use it for cooking. It is as strong, hot, and of even more fragrant flavour than the cultivated "chilies" of India ; the Arabs, who, like the Indians, consider black pepper heating, esteem the red for its cooling properties.

* In most parts of Asia the people have some depreciating name for the mushroom : the Indians, for instance, call it kukar muta, and the Arabs faswat el ajiz.

These brief notices of the cereals and vegetables of the country may be concluded with a succinct account of the growth of cotton and tobacco.

Cotton is indigenous to the more fertile regions of Eastern as well as of Western Africa. The specimens hitherto imported from Port Natal and from Angola have given satisfaction, as they promise, with careful cultivation, to rival in fineness, firmness, and weight the medium-staple cotton of the New World. On the line between Zanzibar and the Tanganyika Lake the shrub grows almost wild, with the sole exception of Ugogo and its two flanks of wilderness, where the ground is too hard and the dry season too prolonged to support it. The partial existence of the same causes renders it scarce and dear in Unyamwezi. A superior quality was introduced by the travelling Arabs, but it soon degenerated. Cotton flourishes luxuriantly in the black earths fat with decayed vegetation, and on the rich red clays of the coast regions, of Usumbara, Usagara, and Ujiji, where water underlies the surface. These almost virgin soils are peculiarly fitted by atmospheric and geologic conditions for the development of the shrub, and the time may come when vast tracts, nearly half the superficies of the lands, here grass-grown, there cumbered by the *primaeva* forest, may be taught to bear crops equalling the celebrated growths of Egypt and Algeria, Harar and Abyssinia. At present the cultivation is nowhere encouraged, and it is limited by the impossibility of exportation to the scanty domestic requirements of the people. It is grown from seed sown immediately after the rains, and the only care given to it is the hedging requisite to preserve the dwarf patches from the depredations of cattle. In some parts the shrub is said to wither after the third year, in others to be perennial.

Upon the coast the cotton grown by the Wasawahili and Wamrima is chiefly used as lamp-wicks and for similar domestic purposes; Zanzibar island is supplied from Western India. The price of raw uncleaned cotton in the mountain regions is about 0·25 dollar per maund of 3 Arab lbs.* In Unyamwezi it fetches fancy prices; it is sold in handfuls for salt, beads, and similar articles. About 1 maund may be purchased for a shukkah, and from 1 to 2 oz. of rough home-spun yarn for a fundo of beads. At Ujiji the people bring it daily to the bazar and spend their waste time in spinning yarn with the rude implements before described. This cotton, though superior in quality, as well as quantity, to that of Unyanyembe, is but little less expensive.

Tobacco grows plentifully in the more fertile regions of East Africa. Planted at the end of the rains, it gains strength by sun and dew,

* In Zanzibar, where the msufi or bombax abounds, its fibrous substance is a favourite substitute for cotton, and costs about half the price.

and is harvested in October. It is prepared for sale in different forms. Everywhere, however, a simple sundrying supplies the place of cocking and sweating, and the people are not so fastidious as to reject the lower or coarser leaves and those tainted by the earth. Usumbara produces what is considered at Zanzibar a superior article; it is kneaded into little circular cakes four inches in diameter by half an inch deep: rolls of these cakes are neatly packed in plantain-leaves for exportation. The next in order of excellence is that grown in Uhiaó: it is exported in leaf or in the form called kambari, "roll-tobacco," a circle of coils each about an inch in diameter. The people of Khutu and Usagara mould the pounded and wetted material into discs like cheeses, 8 or 9 inches across by 2 or 3 in depth, and weighing about 3 lbs.; they supply the Wagogo with tobacco, taking in exchange for it salt. The leaf in Unyamwezi generally is soft and perishable, that of Usukuma being the worst: it is sold in blunt cones, so shaped by the mortars in which they are pounded. At Karagwah, according to the Arabs, the tobacco, a superior variety, tastes like musk in the water-pipe. The produce of Ujiji is better than that of Unyamwezi; it is sold in leaf, and is called by the Arabs hamúmí, after a well-known growth in Hazramaut. It is impossible to assign an average price to tobacco in East Africa; it varies from 1 khete of coral beads per 6 oz. to 2 lbs.

Tobacco is chewed by the maritime races, the Wasawahili, and especially the Zanzibar Arabs, who affect a religious scruple about smoking. They usually insert a pinch of nurah or coral-lime into their quids,—as the Somal introduces ashes,—to make them bite; in the interior, where calcareous formations are deficient, they procure the article from cowries brought from the coast, or from shells found in the lakes and streams. About Unyamwezi all sexes and ages enjoy the pipe. Farther eastward snuff is preferred. The liquid article in fashion amongst the Wajiji has already been described. The dry snuff is made of leaf toasted till crisp and pounded between two stones, mixed with a little magádf or saltpetre, sometimes scented with the heart of the plantain-tree and stored in the tumbakira or gourd-box.

This chapter will conclude with a general description of travelling in East Africa.

It is commonly asserted in the island of Zanzibar that there are no caravans in these regions: this is true if the term be limited to the hosts of camels and mules that cross the deserts and the mountainous tracts of Arabia and Persia; but it is erroneous if applied to a body of men travelling for commercial purposes. As has been stated, the Wanyamwezi have from time immemorial visited and kept open the road to the coast, and, though wars and bloodfeuds may have temporarily closed one line, another

necessarily opened; amongst a race so dependent for comfort and pleasure upon trade, commerce, like steam, could not be compressed beyond a certain point. Until a few years ago, when the extension of traffic induced the country people to enlist as porters, all merchants traversed these regions with servile gangs raised on the island or coast of Zanzibar; a custom still prevalent on the northern and southern routes.* The industrious and commercial Wahiao for instance, near Kilwa, will carry down their own exports for sale, but will not act as porters on the up journey. The Wahiao and other inland races, moreover, delay but a few days on the coast: the Wanyamwezi will linger there from three to six months to savour the dear delights of comparative civilization. An old campaigner will so far overcome his barbarous horror of water-travelling, which has been increased by a few shipwrecks and drownings, as to take boat and to carry his goods to the more profitable market in the town of Zanzibar, where the Wanyamwezi occupy their own quarter. Porterage on the long and toilsome journey is now considered a test of manliness, as the Englishman deems a pursuit or a profession necessary to clear him from the charge of effeminacy. The children imbibe the desire with their milk, and at six or seven years old they carry a little tusk on their shoulders—instinctive porters, as pointer-pups are hereditary pointers:—by premature toil their shin-bones are sometimes bowed to the front like those of animals too early ridden. “He sits in hut egg-hatching” is their proverbial phrase to express our more elegant—

“Home-keeping youth have ever homely wits.”

And they are ever quoting the adage that men who travel not are void of understanding—the African equivalent of what was said by the European sage: “The world is a great book, of which those who never leave home read but a page.” Against this hereditary instinct reasons of mere hire and rations, however apparently weighty, are found wanting. The porter will bargain over his engagement to the uttermost bead, saying that all men are bound to make the best conditions for themselves; yet, after two or three months of hard labour, if he chance upon a caravan returning to his home, a word from a friend, acting upon his innate debility of purpose, will prevail upon him to sacrifice by desertion all the

* This is true of long journeys only. Many races, however, if bribed with beads and cloth, will engage themselves to carry a light load for a few marches. Thus the Wanyika, the Wadigo, and the Wasegeju, near Mombasah, may be persuaded to travel from the coast as far as Chhaga; the Wazaramo will bring down copal to the seaports; the Wakhutu and Wasagara will visit Unyamwezi; the Wagogo send caravans to the maritime regions; the people of Karagwah will act as porters as far south as Utumbara, where they must be relieved by Wanyamwezi; and even the Wavinza may sometimes be induced to shoulder a pack to the Tanganyika Lake.

fruits of his toil. On these occasions the porters are carefully watched ; open desertion would, it is true, be condemned by the general voice, yet no merchant can so win the affections of his men that some will not at times disappear. Until the gangs have left their homes far behind, their presence seems to hang by a thread ; at the least pretext they pack up their goods and vanish in a mass. When approaching their settlements—at the frontier districts of Tura and Mfuto, for instance—their cloth and hire are taken from them, packed in the employer's bales, and guarded by armed slaves, especially at night, and on the line of march. Yet these precautions frequently fail, and, once beyond the camp limits, it is vain to seek the fugitive. In the act of desertion they show intelligence : they seldom run away when caravans first meet, lest their employer should halt and recover them by main force, and, except where thieves and wild beasts are unknown, they will not fly by night. The porter, however, has one point of honour ; he leaves his pack behind him. The slave, on the other hand, certainly robs his employer when he runs away, and this, together with his unwillingness to work and the trouble and annoyance which he causes to his owner, counterbalances his superior dexterity.

Caravans, called in Kisawahili *safari* (from the Arab *safar*, a journey) and by the African *rugendo* or *lugendo*, "a going," are rarely wanting on the main trunk lines. The favourite seasons for the upward-bound are the months in which the greater and the lesser *masika* or tropical rains conclude—in June and September on the coast—when water and provisions are plentiful. Those who delay till the dry seasons have set in must expect hardships on the march ; the expense of rations will be doubled and trebled, and the porters will frequently desert. The down caravans set out in all seasons except the rainy ; it is difficult to persuade the people of Unyanyembe to leave their fields between the months of October and May. They will abandon cultivation to the women and children and merrily take the footpath way if laden with their own ivory, but from the merchant they demand exorbitant wages, and even then they hesitate to engage themselves.

Porterage varies with every year and in every caravan. It knows but two limits : the interest of the employer to disburse as little as possible by taking every advantage of the wants of his employé, and the desire of the employé to extract as much as he can from his employer. In some years there is a glut of porters on the coast ; when they are rare, quarrels take place between the several settlements, each attempting a monopoly of enlistment to the detriment of its neighbours, and a little blood is sometimes let. When the Wanyamwezi began to carry, they demanded for a journey from the coast to their own country 6 to 9 dollars' worth of do-

mestics, coloured cloths, brass wires, and the pigeon's-egg bead called sungomaji. The rate of portage then declined; the increase of traffic, however, has of late years greatly increased it. In 1857 it was 10 dollars, and it afterwards rose to 12 dollars per porter. In this sum rations are not included; the value of these—which by ancient custom are fixed at 1 kubabah (about 1·5 lbs.) of grain per diem, or, that failing, of manioc, sweet potatoes, and similar articles, with the present of a bullock at the frontier*—is subject to greater variations, and is even less reducible to an average than the porter's pay. It is needless to say that the down-journey is less expensive than the up-march, as the carriers rely upon a fresh engagement on the coast. The usual hire from Unyanyembe would be 9 cloths, payable on arrival at the seaport, where each is worth 25 cents, or about 1 shilling. The Arabs roughly calculate—the errors balancing one another—that, rations included, the hire of a porter from the coast to the Tanganyika Lake and back amounts to a total of 20 dollars = 4*l.* 3*s.* From the coast, Wanyamwezi porters will not engage themselves for a journey westward of their own country; at Unyanyembe they break up, and a fresh gang must be enlisted for a march to the Tanganyika or to the Nyanza Lake. It is impossible to average the numbers of an East African caravan, which varies from half a dozen to 200 porters, under a single mundewa or merchant. In dangerous places travellers halt till they form an imposing force; 500 is a frequent figure, and even bodies of 1000 men are not rare. The only limit to the gathering is the incapability of the country to fill more than a certain number of mouths. The larger caravans, however, are slow and cumbrous, and they exhaust in parts the provision of water.

Caravans in East Africa are of three kinds. The most novel and characteristic are those composed only of Wanyamwezi; secondly, are the caravans directed and escorted by Wasawahili freemen or fundi (slave-fattori), commissioned by their patrons; and, lastly, those commanded by Arabs.

The porter, called pagazi or fagazi,† corresponds with the carregador of West Africa. The Wanyamwezi make up large parties of men, some carrying their own goods, others hired by petty proprietors, who for union and strength elect a head mtongi, ras kafilah, or leader. The average number of these parties that annually visit the coast is far greater than those commanded by stranger merchants. In the Unyamwezi caravan there is no desertion, no discontent, and, except in certain spots, little delay.

* A bullock is claimed by up caravans on entering Ugogo: by caravans from the interior at Rubuga.

† The former is the African, the latter the ridiculous Arabized form of the word.

The porters trudge from sunrise to 10 or 11 A.M., and sometimes, though rarely, they travel twice a day, resting only during the hours of heat. They work with a will, carrying uncomplainingly huge tusks, some so heavy that they must be lashed to a pole between two men—a contrivance technically called mzega-zega. Their shoulders are often raw with the weight, their feet are sore, and they walk half or wholly naked to save their cloth for displays at home. They ignore tent or covering, and sleep on the ground; their only supplies are their country's produce, a few worn-down hoes, intended at times to purchase a little grain or to be given as blackmail for sultans, and small herds of bullocks and heifers that serve for similar purposes if not lost, with characteristic African futility, upon the road. Those who most consult comfort carry, besides their load and arms, a hide for bedding, an earthen cooking pot, a stool, a kilindo or bark-box containing cloth and beads, and perhaps a small gourd full of ghee. They sometimes suffer severely from exposure to a climate which forbids long and hard work upon short and hard fare. Malignant epidemics, especially small-pox, often attack caravans as they approach the coast; generally, however, though somewhat lean and haggard, they appear in better condition than might be expected. The European traveller will repent accompanying these caravans; and, as was said of a similar race, the Indians of Guiana, "they will not deviate three steps from the regular path."

Porters conducted by Arab mtajiri, mundewa,* or merchants, are known by their superior condition; they eat much more, work much less, and give far greater trouble to their commanders. They expend part of the cloth and beads which they have received as hire to procure for themselves occasional comforts, and to retain the power of desertion without starving. They take with them a few hoes from their homes on the down journey. The self-willed wretches demean themselves with the coolest impudence, reply imperiously, lord it over their proprietors, regulate the marches and the halts, and, though they work, they never work without loud complaints and open discontent. The mortification of a muster will endanger a mutiny; a change of load, even for a lighter, is a perilous step. Rations are a perpetual source of heartburning: stinted at home to a daily mess of grain-porridge, the porters on the line of march, in places where they can presume, devote all their ingenuity to extracting as much food as possible from their employer. They will make the day one long feed, with the intervals between a multitude of meals expended in smoking, chewing, munching clay and ashes, snuffing, drinking, and solacing themselves with chance "snacks," as mushrooms or a

* The former is the Kisawahili, the latter the Inner-African name for a merchant or travelling trader.

stray head of game. Yet they never own to being properly fed, and the more they eat the more they want. At times they are seized with a furore for meat. When a bullock is slain the kirangozi or guide claims the head, leaving the breast and loin to the mtongi; the remainder is equally portioned amongst the khambi or messes into which the gang divides itself, but the distribution often ends by each barbarian snatching up what he can and running away to cook it. The stoutest porters ever do the least work, and half-laden men, instead of marching faster, only shirk the more. The load of a sick or wounded pagazi is undone and distributed for carriage amongst his comrades; these claim, however, a fee of beads to compensate for the increase of weight. The Arab merchant, next to the Persian, is the most luxurious traveller in the East: a veteran of the way, he well knows the effects of protracted hardship and scarcity upon a wayfarer's health. He carries, therefore, substantial bedding, cages full of poultry, and a stock of drugs and comforts, coffee, sugar, and perhaps tea, whilst a number of slaves, male and female, minister to his wants on the road and in the camp. Though he prefers the open air during the day, he retires at night to a tent,* which is carefully pitched, surrounded with a "pai" or dwarf trench in case of rain, and bushed round with leafy branches to secure privacy. The European traveller, however, will not enjoy the companionship of the Arab's caravan, which marches by instinct rather than reason. It begins by dawdling over the preliminaries; it then pushes hurriedly onwards till arrested by epidemic or desertion; and, finally, it lingers over the end of the journey, thus losing time twice. This style of progress is fatal to observation; moreover none but a special caravan, consisting of slaves hired for the purpose in the island of Zanzibar or on the coast, and accompanied by their own abbab or patroon—without whom they will obey no employer, however generous or energetic—will enable the explorer to strike into an unbeaten path or to progress a few miles beyond the terminus of a main trunk road. The most enterprising hired porters will desert, leaving the caravan like a waterlogged ship.

Between these two extremes are the caravans directed by the Wasawahili, the Wamrima, and the slave fundi,† kindred souls with the Pagazi, understanding their languages and familiar with their manners, habits, and customs. These Safari are neither starved like the trading parties of Wanyamwezi nor pampered

* The tent is called by the Wasawahili *haymá* (from the Arabic *Khaymah*), and by the maritime races, "tanga," or a sail.

† The fundi of E. Africa corresponds with the pombeiro of the West, "a native mercantile traveller," from the Angolan word *pambu*, a route or journey. (Mr. Cooley, 'Inner Africa Laid Open,' p. 8.) In Kisawahili "p'hamba" signifies rations or provisions.

like those directed by the Arabs: there is more comfort at the halting-place and less fatigue during the march, consequently there are fewer cases of disease and death. The semi-African Mtongi, hating and jealous of Arabs and all strangers, throw every obstacle in their way, spread reports concerning their magical and malevolent powers which are dangerous amongst the susceptible barbarians, offer a premium for desertion, and, in fine, labour hard, though fruitlessly, to retain their ancient monopoly of the profits derived from the interior.

In collecting a caravan the first step is to "make" as the people say "a khambi" or kraal. The mtongi announces, by pitching his tent in the open, and by planting his flag, that he is ready to travel; this is done because amongst the Wanyamwezi a porter who persuades others to enlist does it under pain of prosecution and fine-paying if a death or an accident ensue. Petty chiefs, however, and their kinsmen will bring with them in hope of promotion a number of recruits, sometimes all the male adults of a village, who then recognise them as headmen. The next step is to choose a kirangozi or guide. Guides are not a peculiar class; any individual of influence and local knowledge who has travelled before is eligible to the post. The kirangozi must pay his followers to acknowledge his supremacy, and his mganga or medicine-man for providing him with charms and prophylactics. On the march he precedes his porters, and any one who breaks this rule is liable to a fine. He often undergoes abuse for losing the way, for marching too far or not far enough, for not halting at the proper place, and for not setting out at the right time. In return he enjoys the empty circumstance of command, and the solid advantage of better food and a present, which, however, is optional, at the end of the journey: he carries a lighter load, and his emoluments frequently enable him to be attended by a slave. The only way of breaking the perverse and headstrong herd into a semblance of discipline is to support the kirangozi at all junctures, and to make him, if possible, dole out the daily rations and portion the occasional presents of meat.

At the preliminary kambi the mtongi superintends the distribution of each muzigo or load. Pagazi are mostly lads, lank and light, with the lean and clean legs of leopards. Sometimes, however, a herculean form is found with the bullet-head, the broad bull-like neck, the deep wide chest, and the large strong extremities that characterize the Hammal of Stamboul. There is usually a sprinkling of greybeards, who might be expected, as the proverb is, to be "leaning against the wall." Amongst these races, however, the older men, who have learned to husband their strength, fare better than their juniors, and the Africans, like the Arabs, object to a party which does not contain veterans in

beard, age, and experience. Upon the same principle Alexander the Macedonian officered the most conquering army that the world ever saw with warriors who had seen their sixtieth summer. In portioning the loads there is always much trouble : each individual has his favourite fancy, and must choose, or, at any rate, must consent to his burden. To load porters properly is a work of skill. They will accept at the hand of a man who knows their nature a weight which, if proposed by a stranger, would be rejected with grunts of disgust. They hate the inconvenience of boxes, unless light enough to be carried at both ends of a "banghi" pole by one man, or heavy enough to be slung between two porters. The burden must never be under a fair standard, especially when of such description that it decreases by expenditure towards the end of the journey ; a lightly-laden man not only becomes lazy, he also makes his fellows discontented. The nature of the load, however, causes an inequality of weight. Cloth is tightly rolled up in the form of a huge bolster, 5 feet long by 18 to 24 inches in diameter, protected against wear and weather by makanda or coarse matting of brab-leaf, and corded over. This bundle is fastened, for the purpose of preserving its shape and for convenience of stacking, in a cradle of three or more flexible branches, cut from a small tree below the place of junction, barked and trimmed, disposed along the length of the load, and confined at the open end by a lashing of fibre-rope. Besides his weapons and marching kit, a man will carry a pack of 2 farasilah or 70 lbs., and this perhaps is the maximum. Beads are placed in long, narrow bags of domestics, matted, corded, and cradled like cloth ; being a less elastic load, they are more difficult to carry, and therefore seldom exceed 50 lbs. Brass and other wires are carried in daur, khata,* or circles, lashed to both ends of a pole, which is generally the large midrib of a palm-frond, with a fork cut in its depth at one extremity to form a base for the load when stacked, and provided at the point of junction with a kitambara or pad of grass, rag, or leather. Wire is the lightest, as ivory is the heaviest, of loads ; the tusk, when under 70 lbs., is never divided between two porters. It severely tries the strength when carried up and down steep or broken ground, and the shoulder suffers unless protected by a broad rim like a ruff or cape of stiff hide, with a central aperture for the neck. The African porter will carry only the lightest loads upon his head, and the custom is mostly confined to women and children. Domestic slaves are unable, from want of habit, to bear anything heavier than a tent or a bed ; they therefore attempt an immunity from loads, declaring themselves to be sinkari or soldiers,

* Khata in Kisawahili and daur in Arabic are synonymous words for the circles in which wires are sold.

and asserting that their useless single-barrelled French guns are a sufficient burden for them. The merchants of course carry nothing but themselves, except in extreme cases; but when the sudden sickness or the evasion of a porter endangers the safety of his load, they shoulder it without hesitation. The chief proprietor usually follows his caravan, accompanied by some of his partners and armed slaves, to prevent the straggling which may lead to heavy loss; he is therefore often exposed to the heat and tedium of the road longer than the rest of his party. The Arab boasts, with some truth, that his superior powers of endurance and his capability of resisting climate have enabled him—to the exclusion of other strangers, Persians, Hindus, and Banyans—to conduct the profitable exploration of these regions.* The impression of the traveller, derived from the frequent reports amongst this enterprising race of deaths from disease, besides the victims of violence, is that the rate of mortality is remarkably high.

The march of an East African caravan is not without some order and circumstance. At 3 A.M. all is silent in camp: even the Mnyamwezi watchman nods over his fire. About an hour later the red-faced and apoplectic-looking cock—the alarm of the road—crows a salutation to the dawn; he is answered by half-a-dozen of his fellows, who are prime favourites with the slaves and porters. By 5 A.M. the camp is fairly roused and a low chatting becomes audible. This is a critical moment. The pagazi have promised overnight to start early for a long march, but the cold morning makes them unlike the men of the warm evening; perhaps one of them pleads fever, and in every caravan there is some lazy, loud-lunged, and contradictions fellow, whose only pleasure is to oppose his employer. If no march is in prospect, the porters sit obstinately before the fire, warming their hands and feet, inhaling the smoke with averted heads, and casting quizzical looks at their fuming and fidgeting master. If they are unanimous, trouble is vain; even "soft sawder" is like "throwing comfits to cows." When, however, there is a difference of opinion, active stimulating may urge to exertion. Then a louder conversation leads to cries of *Kwecha! kwecha! Pakiá! pakiá! Hopá! hopá!*—Collect! pack! set out! *Safari! safari leo!*—a journey, a journey to-day! and certain peculiarly African boasts, *P'hunda! ngamiá!*—I am an ass! a camel!—accompanied by the shouts of Stentor, drumming, whistling, piping, and the braying of barghumi or horns. The slaves assemble to throw their master's tents and to receive their light burdens, after which they hurry off in a straggling body, thinking only of escaping an hour's sun. The porters hug the fire

* Several Persians, however, and even a solitary Banyan, have, it is said, penetrated to Unyamwezi, and the earliest explorer of the country is Muza Mzuri, the Indian doyen of Kazeh.

till driven from it, when they unstack the loads propped against the trees or piled up before their boothies, and pour out of the kraal or the village ; at a short distance they halt, unshoulder their burdens, and give a few minutes' law to the late and lazy. The merchant lingers to the last ; one or two loads have been left upon the ground by deserters or shirkers ; consequently he must tax his ingenuity in persuading by promises a willing porter or a slave to carry double, or, that failing, to procure a day labourer from some near village. Generally at this conjuncture the kraal is fired by neglect or mischief, and the next caravan will find only a heap of smoking ashes and a few charred sticks standing to receive them.

When the long Indian file—necessitated by the narrowness of the path—has formed up in compact order, the kirangozi, shouldering his load, and holding his red tattered flag furled but ready for floating when spectators turn out to gaze, takes precedence of the party. The dignitary is conspicuous in some wild and wonderful attire ; for headdress the spoils of a tippet monkey, a pair of antelope horns, or a wild cat's skin dangling from forehead to shoulders, bound at the neck, and covered with a bunch of owl's or of crested crane's feathers ; and he wears upon his body a long narrow piece of scarlet broadcloth, with a hole for the neck, and two streamers dangling before and behind. His other insignia of office are the kipunga or fly-flapper of zebra's tail, which is generally affixed to his person as if it were a natural growth ; a kome, or hooked iron spit, garnished with a central bulge like a sausage of parti-coloured beads, and a waist-belt of many little gourds containing simples and charms. He is followed by a man tomtoming lustily upon a kettle-drum shaped like an European hourglass.

Now the long serpentine line of porters begins to stretch and wind across the plain, here threading the forest trees, there infracted by rough and broken ground. It is a curious and picturesque spectacle. The kirangozi is immediately followed by the aristocracy of the caravan,—the ivory-carriers, who in their burden take a pride which salves the sore of its dead galling and undiminishing weight. The tusks are poised upon the shoulder ; large cattle-bells dangle from the point which is carried to the front, whilst the porter's travelling-kit is fastened to the bamboo behind. Next in order come the cloth and the bead carriers ; then those laden with wire ; and in the rear a rabble rout of slaves corded or chained in file ; women and children in separate parties, the idlers and the invalids, bearing the lighter stuff, rhinoceros tusks, hoes, cones of salt and tobacco, baskets, boxes, beds, tents, calabashes, water-gourds, bags, pots, mats, and private stores, attached in packages to both ends of a long and narrow, a smooth and elastic pole, supported upon either shoulder. A mganga almost invariably accompanies the caravan, not disdaining to act as a common porter ; the

"parson" claims, in virtue of his holy calling, the lightest load, and, as he eats much but works little, he is a stout, smooth, well-greased, and sleek-headed man. When cattle are driven they usually precede the caravan. The porters, however, often object to this assumption of dignity, and broken heads result. Asses neatly equipped with hide bags are driven in the middle of the line, otherwise they run the risk of being lost. The musketeers and domestic slaves circulate about the caravan, dispersing themselves through its length to indulge in the bondsman's dear delight-command. A strong party, often headed by the master or masters, is invariably in the rear, the place of danger, and it halts to bring up stragglers.

There is a wondrous variety of appearance amongst the porters, of whom scarcely two are similarly habited. All have more ornament than dress. The upper ranks wear a dirty cotton loin-cloth of the scantiest dimensions; the others use only the goat-skin apron, loosely slung over one shoulder. Many prefer the Adamical costume, having an alacrity at twisting their solitary garment round their neck; and during a shower the caravan in general doffs its attire and places it in a dry place between the shoulder and the load. The head is decorated with a skin-strip of zebra's mane, bound round the poll with the particoloured hair bristling outwards, or with a long straight thong of stiffened ox-tail, standing up about a foot from the forehead and terminating in a tuft. Other ornaments are the skins of monkeys and ocelots, rouleaus and fillets of white, blue, or scarlet cloth, and huge bunches of ostrich, crane, and jays' feathers crowning the head like the top-knots of certain fowls. All carry some weapon; the heaviest armed have a bow and a long quiver full of arrows, two or three long spears and assegais, a battle-axe, and a long dagger. When grain is served out for some days' march, each porter bears his posho or rations in a bundle fastened by a cloth to the small of his back, and his kit or stock is often attached to the same place. Small iron bells are worn by the wealthier, fastened to a leather thong, bound round the ankle or below the knees. The incessant tinkling harmonises in African ears with the chime-like "Ti-ti ti-ti tang" of the ivory bell, and the loud "Wa-ta-ta" of the horns. The normal amusements of a march are whistling, singing, shouting, hooting, horning, drumming, imitating the cries of birds and beasts, repeating senseless words, and abundant squabbling: in fact, perpetual noise, which, however, differs greatly from the hubbub of the halt. The uproar redoubles near a village, where the flag is unfurled and the line lags to display itself. All give vent to loud shouts, Hopa! hopa!—go on! go on! Mgogolo!—a stoppage! Food! food! Don't be tired! The kraal is here—home is near! Hasten, kirangozi! Oh! we see our mothers! We go to eat! On the

road it is considered prudent as well as pleasurable to be as loud as possible, in order to impress upon plunderers an exaggerated idea of the caravan's strength; for equally good reasons silence is recommended in the kraal. When threatened with attack and no ready escape suggests itself, the porters ground their loads and prepare for action. It is only self-interest that makes them brave; a small cow, trotting up with tail erect, will break a line of 150 men carrying goods not their own. Sometimes a sturdy fellow "renowns it" by carrying his huge burden round and round, like a horse being ringed, and starts off at speed. When two bodies meet, that commanded by an Arab claims the road. If both are Wanyamwezi, violent quarrels ensue; but fatal weapons, which are too ready at hand, are turned to more harmless purposes, the bow and spear being used as whip and cudgel. These affrays are not rancorous till blood is shed. Few tribesmen are less friendly for so trifling an affair as a broken head; even a slight cut or a shallow stab is little thought of; but, if returned with interest, great loss of life may arise from the slenderest cause. When friendly caravans meet, the two kirangozi sidle up with a stage pace, a stride, and a stand, and prance till arrived within distance; then suddenly and simultaneously "ducking," like boys "giving a back," they exchange a butt violently as fighting rams, and their example is followed by all with a rush and a crush, which ends, if there be no bad blood, in shouts of laughter. The weaker body, however, must yield precedence and offer a small present as blackmail.

About 8 A.M., when the fiery sun has topped the trees and a pool of water appears, the braying of a barghumi and sometimes a musket-shot announces a short halt. The porters stack their loads, and lie or loiter about for a few minutes, chatting and smoking tobacco and bhang, with the usual whooping, screaming cough, and disputing eagerly about the resting-place for the day.* If the stage be prolonged, towards noon the caravan lags, straggles, and suffers sorely. The heat of the ground, against which the horniest sole never becomes proof, tries the feet like polished leather boots on a quarter-deck in the dog-days near the Line, and sore tribulation is caused by the cry M'iba hapa!—thorns here! The slaves ensconce themselves in snug places; the porters, propping their burdens against trees, curl up, dog-like, under the shade; some malinger; and this, the opportunity preferred for desertion, is a painful hour to the proprietor. Still the men rarely break down. As in Indian marching, the African caravan prefers to end the day, rather than to begin it, with a difficulty—the ascent of a hill or the fording of a stream. They

* In the Tirikeza or afternoon march this halt takes place a little before sunset, and the caravan then resumes its trudge till dark.

prefer the strip of jungle at the farther end of a district or a plantation for safety as well as for the comfort of shade. They avoid the vicinity of rocks on account of the radiated heat; and on desert plains they occupy some slightly rising ground, where the night-cold is less severe than in the lower levels.

At length an increased hubbub of voices, blended with bells, drums, fifes, and horns, and sometimes a few musket-shots, announces the pleasing intelligence that the journey is shortened by a stage. Each selfish body then presses forward at speed to secure the best boothy in the kraal or the most comfortable hut in the village, and quarrels again seem serious. The most energetic apply themselves to "making all snug" for the long hot afternoon and the nipping night; some hew down young trees, others collect heaps of leafy boughs; one acts architect, and many bring in huge loads of firewood. The East African is so much accustomed to house-life that the bivouac in the open appears to him a hardship; he prefers even to cut out the interior of a bush and to squat in it, the portrait of a comfortable cynocephalus. As a rule, the villagers are more willing to receive the upward-bound caravans than those who, returning, carry wealth out of, instead of into, the country. Merchants—on account of their valuable outfits—affect, except in the safest localities, the khambi rather than the village; the latter, however, is not only healthier, in miasmatic lands, despite its uncleanliness, but is also more comfortable, plenty and variety of provisions being more readily procured inside than outside. The Arab's khaymah is a thin "pál" or ridge-tent of flimsy domestics, admitting sun and rain, and permitting at night the occupant to tell time by the stars; yet he prefers it, probably for dignity, to the far more pleasant boothy.

The Wamrima willingly admit strangers into their villages; the Wazaramo would do the same, but they are constantly at feud with the Wanyamwezi, who therefore care not to avail themselves of the dangerous hospitality. In Khutu caravans seize by force the best lodgings. In Eastern Usagara travellers pitch tents in the central clear spaces surrounded by the peasantry's round huts, under whose low and drooping eaves the pagazi find shelter. In the western regions, where the tembe or square village prevails, kraals form the nighting-place. In Ugogo strangers rarely enter the hamlets, the hovels being foul and the people dangerous. Throughout East and Central Unyamwezi caravans defile into the villages without hesitation. Some parties take possession of the Iwanza or public-house; others build for themselves boothies of leafy boughs, which they are expected to clear away before departure, and the headman provides lodgings for the mtongi. In Western Unyamwezi the doors are often closed against strangers, and in Eastern Uvinza the people will admit travellers to bivouac, but

they will not vacate their huts. In Western Uvinza, a desert like Marenga and Mgunda Mk'halu, substantial khambi occur at short intervals. At Ujiji, the Sultan, after offering the preliminary magubiko or presents, provides his guests with lodgings, which they must vacate in favour of new comers after a time sufficient for enabling them to build huts. In the other Lake regions the reception depends mainly upon the number of muskets in a caravan and the character of the headman and his people.

The khambi or kraal everywhere varies in shape and material. In the east regions, where trees are scarce, wattle frames of rough sticks, compacted with bark-fibre, are disposed in a circle; the forked uprights, made higher behind and lower in front to form a sloping roof, support horizontal or cross poles, which are overlaid with a rough thatch of grass- or grain-cane. The central space upon which the boothies open is occupied by one or more huts preserved for the chiefs of the party; and the outer circle is a loose fence of thorn branches, flimsy, yet impassable to breech-less legs, unshod feet, and thin loose garments. When a kraal must be built, rations are not served out till enclosures made round the camp secure the cattle; if the leader be dilatory or unwilling to take strong measures, he may be a serious loser. The stationary kraals become offensive if not burnt down after a few months. The "masika-kraal," as it is called, is that occupied only during the rainy monsoon, when water is everywhere found. The vicinity and the abundance of that necessary are the main considerations in selecting the situation of encampments. The bark kraals commence in Uvinza, where trees abound, and extend to the Tanganyika Lake; some are substantial, as the temporary villages, and may be a quarter of a mile in circumference. The Lakist population carry with them, when travelling, Karagwah or stiff mats of reed and rush; these they spread over and fasten to a firmly-planted framework of flexible boughs, not unlike a bird's-nest reversed, or they build a cone of strong canes, in the shape of piled muskets with the muzzles lashed together. It is curious to see the small compass in which the African traveller can contract himself: two, and even three, will dispose their heads and part of their bodies—leaving their lower limbs to the mercy of the elements—under a matting little more than a yard square.

When lodgings in the kraal have been distributed, and the animals have been off-packed, and water has been brought from the pit or stream, all apply themselves to the pleasant toil of refection. Merrily then sounds the breathless chant of the women pounding or rubbing down grain, the song of the cook, and the tinkling of the slave's pestle, as he bends over the iron mortar from which he stealthily abstracts the coffee. The fireplaces are three stones or clods, placed trivewise upon the ground, so that a draught may feed the flame; they support a small black earthen

pot, round which the khambi or little knot of messmates perseveringly squat despite the stinging sun. If there be any delay in serving out provisions, loud cries of Posho! p'hamba!—rations! food!—resound through the camp; yet, when fatigued, the porters will waste hours in idleness rather than walk a few hundred yards to buy grain. If meat be served out to them, it is eaten as a relish; it never, however, interferes with the consumption of porridge. A sudden glut of food appears to have the effect of intoxicating them. The Arabs, avoiding regular rations, alternately gorge and starve their porters, knowing by experience that such extremes are most grateful to the barbarian stomach. The day must be spent in very idleness; a man will complain bitterly if told to bring up his pack for opening. On such occasions he and his fellows will raise their voices, and declare that they will not be ordered about like domestic slaves, and crouch obstinately round the smoky fire, the pictures of unutterable disgust.

When a long waterless stage lies ahead, it is divided by a "tirikeza," or afternoon march: this is one of the severest inflictions in East African travelling. At 11 A.M. everything is thrown into confusion, although two or three hours must elapse before departure; loads are bound up, pots are washed, tents are thrown, and stools are carried off by fidgeting porters and slaves. They always eat previously to starting, with the false idea that it gives them strength and bottom. Having drunk for the last time, and filled their gourds for the night, they set out shortly after noon, when the sun, severely felt after the shade, is like a fireball in the firmament and the earth is seething with glow and reek, and they endure affliction till their shadows lengthen out upon the ground. The tirikeza is generally long, the well is empty, and the porters wish to abridge the morning march which leads to water.

Night is ushered in by penning the cattle in inner circles of thorn and bush, as a protection against wild beasts, and by collecting and numbering the loads—a difficult task, because every man shirks the least trouble. When there has been no "tirikeza" and provisions are plentiful, the day ends with a dance or a song,—a somewhat laborious performance—which, if prolonged to a late hour, suggests idle intentions for the next morning. Usually about 8 P.M. sounds the cry, Lala! lala!—sleep! It is willingly obeyed by all except the women, who must often awake to confabulate even at midnight. One by one the caravan sinks into torpid slumber. At this hour, especially in the jungle bivouac, the scene often becomes truly impressive. The red fires, forming a circle of light in the depths of a black forest, flaming against the trunks and defining the foliage of the nearer trees, are reflected by lurid groups in every variety of shape and posture. Above, the dark purple sky, studded with golden points, domes the earth with

apparently narrow bounds; whilst in the western horizon a resplendent crescent, supporting a dim ash-coloured globe, and crowned by Venus sparkling like a diamond, sinks in all the glory and gorgeousness of Nature's sublimest works.

The rate of caravan marching in East Africa greatly varies. In cool moonlit mornings, over an open path, the pagazi will measure 4 miles an hour. This is reduced by a quarter after a short "spirt," and, under normal circumstances, the greatest speed will be 3 miles per hour. Throughout the journey it is safe to reckon for an Indian file of moderate length—150 men— $2\frac{1}{2}$ statute miles, or, what is much the same, 1.75 geographical miles, per hour, measured by compass from point to point. Mr. Cooley ('Inner Africa Laid Open,' p. 6), a "resolute reducer of itinerary distances," rightly estimates that the ordinary day's journey of the missionaries in West Africa never exceeded 6 geographical miles projected in a straight line; on rare occasions, and with effort, it may have extended to 10 miles. Dr. Livingstone gives the exceedingly high maximum of 2.50 to 3 miles an hour in a straight line, but his porters were lightly laden, and the Makololo are apparently a "gamer" race than the East Africans. Dr. La-cerda's men were horrified at the thoughts of marching ordinarily $2\frac{1}{2}$ (Portuguese) leagues, or about $9\frac{1}{2}$ statute miles per day.

The proceedings of the caravan on approaching the end of its journey have been described in the preceding pages. When arrived within two or three marches of the coast, the mtongi of a Wanyamwezi caravan calls a halt till the presents promised by his escort of touters have arrived. He then delays as long as possible, to live gratis upon the Banyan who proposes to deal with him. After a time the caravan enters in stately procession—a preliminary to the usual routine of commercial operations. Bargains are usually concluded at night; to a civilized man the work would be an impossible trial of patience. A lot of 200 tusks will rarely be sold under four months. After settling with the diwans or village headmen and defraying the charges of government, the barbarian has recourse to the Banyan. The tusk is laid upon the ground, and the purchaser begins by placing handsome cloths as pillows under the bamboo and point and by covering its whole length with a third; these form the first perquisites of the seller. Then begins the chaffering for the price. The Banyan screams, turns out his client, slaps and pushes him, and receives a return of similar treatment with interest. He takes advantage of his knowledge that the African in making a bargain is never satisfied with the first offer, however liberal; any attempt at a tariff would be contemptuously rejected by both parties. The African delights in bargaining, and the Banyan, having brighter wits, relies upon them for a profit which the establishment of fair prices

would curtail. It would be vain to attempt any alteration in this style of commercial intercourse ; however despicable it may appear in the London market, it is a time-honoured institution in East Africa.

CHAPTER XVI.

COMMERCE : IMPORTS AND EXPORTS.

COMMERCE has for ages been a necessity to the East African, who cannot be contented without his clothing and his ornaments, which he receives in barter for the superfluity of his country. Against its development, however, serious obstacles have hitherto interposed. On the seaboard and in the island the Banyans, by monopolizing the import traffic, do injury to the internal trade. In the interior the Wasawahili excite, with all the animosity of competition, the barbarians against Arab interlopers, upon the same sordid and short-sighted principle that the latter display when opposing the ingress of Europeans. Finally, the Arabs, according to their own confession, have by rapacity and imprudence impoverished the people without enriching themselves. Their habit of sending fundi on trading trips is, as has been explained, most prejudicial both to seller and buyer ; the prices of provisions as well as of merchandise increase almost visibly ; and though the evil might be remedied by a little combination, solidarity of interests being unknown, that little is nowhere found. All, Banyans, Wasawahili, and Arabs, like semi-civilized people generally, abhor and oppose a free trade, which they declare would be as injurious to themselves as doubtless advantageous to the country. Here, as in Europe, the battle of protection has still to be fought ; and here, unlike Europe, the first step towards civilization, namely, the facility of intercourse between the interior and the coast, has yet to be created.

The principal imports into East Africa are domestics and piece goods, plain and unbleached cotton cloths, beads, and brass wire. The minor items for the native population are prints, coloured cloths Indian and Arabian, broadcloth, calicos, caps, ironware, knives and needles, iron and copper wires for ornaments, and in some regions trinkets and ammunition. A small trade, chiefly confined to the Arabs, is done in provisions, spices, drugs, and other luxuries.

The people of East Africa when first visited were satisfied with the worst and flimsiest kaniki or indigo-dyed Indian cotton. This they presently gave up for the "merkani," American "domestics," or unbleached shirting and sheeting, which now supplies the markets from Abyssinia to the Mozambique. But the wild

men are losing predilection for a stuff which is neither comfortable nor durable, and in many regions the tribes, satisfied with goat-skins and tree-barks, prefer to invest their capital in the more attractive and durable beads and wire. It would evidently be advantageous if England or her Indian colonies would manufacture an article better suited to the wants of the country than that at present in general use; but, under existing circumstances, there is little probability of this being done.

The "domestics" from the mills near Salem, called in the island of Zanzibar wilaiti ("foreign"), or khami (the "raw"), is known throughout the inner country as "merkani" or American. These unbleached cottons are of two kinds: the wilaiti mpana (broad) or sheeting, sold in pieces about 30 yards long and 36 to 38 inches broad, and the wilaiti kabibu (narrow) or shirting, of the same length but less in breadth, from 32 to 34 inches. In the different mills the lengths vary, the extremes being 24 and 36 yards. The cloth-measures in use throughout the country are the following:—

2½ Fitr (short spans*)	= 1 Mukono, Ziraá, or cubit.
2 Mikono, or Ziraá (cubits)	= 1 Half-Shukkah (<i>i.e.</i> 3 feet of domestics).
2 Half-Shukkah	= 1 Shukkah, Mwenda, Upande, or Lupande, the Portuguese Braca (<i>i.e.</i> 6 feet of domestics).
2 Shukkahs	= 1 Tobe (Ar. Saub), Doti, Unguo ya ku shona (washing cloth), or simply Unguo (12 ft.)
2 Doti	= 1 Takah.
7 to 11 Doti	= 1 Jurah or Gorah, the piece.

The price of domestics greatly varies in dear years and cheap years. At Zanzibar it sometimes falls to 2 dols. per gorah or piece, and it often rises to 2·75 dols. In selling, the price ranges from 15 to 22 shukkahs, each of which, assuming the dollar† or

* The fitr or short span is from the extended end of the forefinger to the thumb; the shibr or long span is from the thumb to the little finger; of these, two go to that primitive measure the cubit or elbow length. Two cubits in long measure compose the wár or yard, and two wár the ba'a or fathom.]

† When the dollar is alluded to, the Maria Theresa crown is always meant. The price in Bombay is from 213 to 215 Co.'s rs. per cent. At Zanzibar the crown is divided like the rupee into 16 annas, and each anna into 7 or 8 piee; of these the full number is 128 to the dollar, but it is subject to incessant fluctuations. Merchants usually keep accounts in dollars and cents. The Arabs divide the dollar as follows:—

4 ruba baisah (the "pie") = 1 baisah (in the plur. biyas), the Indian paisa.

8 biyas = 1 anna.

2 annas, or 16 piee = 1 tumun or eighth.

4 annas, or 32 piee, or 25 cents = 1 ruba, rubo or quarter-dollar, the Indian paola.

2 ruba, or 64 piee, or 50 cents = 1 nusu or half-dollar.

2 nusu = 1 dollar.

The Spanish or pillar dollar is called by the Arabs abu madfa, and by the Wassawilli riyal maxinga (the "cannon-dollar"). In the East generally it is worth from 6 to 8 per cent. more than the Maria Theresa, but at Zanzibar, not being a legal tender, the value is unfixed. The only subdivision of this coin generally known is the seringe, pistoline, or "small quarter-dollar," which is worth only 10 piee and 2 piee, whereas the ruba, or quarter of the Maria Theresa, is 32 piee. The French

German crown to be worth 4s. 2d., will be worth upon the island from 6d. to 8d. The shukkah is, as has been said, the shilling and florin of East Africa, and it is assuredly the worst circulating medium ever invented by mankind. The progress of its value as it recedes from the seaboard, and other details concerning it, which may be useful to future travellers, have been treated of in the preceding pages.

First in importance amongst the cloths is the kaniki or kiniki ; its names and measures are made to differ by the traders according to the fashion of semi-civilized people, who seek in confusion and intricacy facilities for fraud and chicanery. The popular divisions are—

4 Mikono, Ziraá, or cubits	= 1 Shukkah.
2 Shukkah	= 1 Doti or Tobe.
2 Doti	= 1 Jurah, Gorah, or Takah.
2 Takah	= 1 Korjah, Kori, or score.

Of this indigo-dyed cotton there are three kinds : the best, which is close and neatly made, is seldom exported from Zanzibar. The gorah or piece of 16 cubits, 45 inches in breadth, is worth about 1 dollar. The common variety, 40 inches broad, supplied to the markets of the interior, costs about half that sum ; and the worst kind, which averages in breadth 36 inches, represents a little less. The value of the korjah or score fluctuates between 8 and 13 dollars. Assuming, therefore, the average at 10 dollars, and the number of shukkahs contained in the gorah at 80, the price of each will represent 6d. Thus it is little inferior in price to the merkani or domestics when purchased upon the seaboard : its progress of value in the interior, however, is by no means in proportion, and by some tribes it is wholly rejected.

The lucrative bead trade of Zanzibar is now almost entirely in the hands of the Banyan capitalists, who, by buying up ships' cargoes, establish their own prices, and produce all the inconveniences of a monopoly. In laying in a stock the traveller must not trust himself to these men, who seize the opportunity of palming off the waste and refuse of their warehouses : he is advised to ascertain from respectable Arab merchants, on their return from the interior, the varieties requisite on the line of march. Any neglect in choosing beads, besides causing daily inconvenience, might arrest an expedition on the very threshold of success : towards the end of these long African journeys, when the real work of exploration commences, want of outfit tells fatally. The bead-monopolizers of Zanzibar supplied the East African Expedition with no less than nine men's loads of the cheapest white and black

5-franc piece, raised in value by a somewhat arbitrary process from 114 to 110 per 100 "piastres d'Espagne" by M. Guillain in 1846, has no currency, though the Banyans attempt to pass them off upon strangers at 108 for 100 Maria Theresas.

beads, some of which were thrown away, as no man would accept them at a gift. Finally, the utmost economy must be exercised in beads: apparently exhaustless, a large store goes but a little way: the minor purchases of a European would average 10 strings or necklaces per diem, and thus a man's load rarely outlasts the fifth week.

Beads, called by the Arabs kharaz, and by the Wasawahili ushangha, are yearly imported into East Africa by the ton—in quantities which excite the traveller's surprise that so little is seen of them. For centuries there has been a regular supply of these ornaments; load after load has been absorbed; but although they are by no means the most perishable of substances, and though the people, like the Indians, carry their wealth upon their persons, not a third of the population wears any considerable quantity. There are about 400 current varieties, of which each has its peculiar name, value, and place of preference; yet, being fabricated at a distance from the spot, they lack the perpetual change necessary to render them thoroughly attractive. In Urori and Ubena, antiquated marts, now nearly neglected, there are varieties highly prized by the people: these might be imitated with advantage.

For trading purposes a number of different kinds must be laid in:—for travellers, the coral or scarlet, the pink porcelain, and the large blue glass bead, are more useful than other colours. Yet in places even the expensive coral bead has been refused.

The measures of beads are as complicated and arbitrary as those of cloth. The following are the terms known throughout the interior, but generally unintelligible at Zanzibar, where this merchandise is sold by weight.*

4 Bitil (each a single length from index tip to wrist) = 1 Khete.

10 Khete (each a doubled length round the throat, or round the thumb, to the elbow-bone = 1 Fundo (*i.e.* a "knot").

10 Fundo (in the plural, Mafundo) = 1 Ugoyye, or Ugoe.

10 Ugoyye (or 60 Fundo) = 1 Miranga, or Gana.

Of these bead measures there are local complications. In the

* Beads are sold in Zanzibar island by the following weights:—

16 wakiyyah (ounces, each = 1 dollar in weight) = 1 ratl (or pound; in the plural, artal).

3 ratl, or 48 wakiyyah = 1 man (maund).

12 amnan (maunds) = 1 frasilah (35 to 36 pounds).

60 artal (pounds) = 1 jizlah.

20 to 22 farasilah (according to the article purchased) = 1 kandi (candy).

The Zanzibar lb. is the current English avoirdupois. The Arabs use a ratl without standard, except that it should be equal to 16 Maria Theresa dollars. According to M. Guillain, it is 4 grammes (each 22.966 grs. avoir.) less than the English lb., and when reduced to 7 grammes it is considered under weight. The "man" or maund is the general measure: there are, however, three varieties. The "man" of Zanzibar consists of 3 ratl, that of Maskat contains 9, and that of Oman generally 0.25 less than the Zanzibar maund. The frasilah (in the plur. farasilah) may roughly be assumed as one-third of the cwt.: the word probably gave rise to the English coffee weight called a "frail."

central regions, for instance, the khete is of half size, and the fundo consists of 5, not of 10 khete.

Beads are purchased for the monopolizers of Zanzibar unstrung, and before entering the country it is necessary to measure and prepare the lengths for barter. The string, called "utembwe" (in the plural "t'hembe"), is generally made of palm-fibre, and much depends for successful selling, especially in the larger kinds of beads, upon the regularity and attractiveness of the line. It will be remembered that beads in East Africa represent the copper and smaller silver coins of European countries; it is, however, impossible to reduce the khete, the length most used in purchases, to any average: it varies from a halfpenny to three pence.* The following varieties are imported in extensive outfits. Nos. 1, 2, and 3 are the expensive kinds; Nos. 4, 5, and 6 are in local demand, cheap in the maritime, and valuable in the central regions, and the rest are the more ordinary sorts. All those that are round and pierced are called indifferently by the Arabs madruji, or the "drilled."

1. Samsam (Ar.), sámesáme (Kis.), kimara-p'hamba (food-finishers), joho (scarlet cloth), and kifungá-mngi (town-breakers, because the women are mad for them), are the various names for the small coral bead, a scarlet enamelled upon a white ground. They are known at Zanzibar as kharaz-kartasi—paper beads—because they are sent into the country ready strung, and packed in paper parcels, which ought to weigh 4 pounds each, but which are generally found to vary from 8 to 10 fundo or knots. Of this bead there are fifteen several sizes, and the value of the frasilah is from 13 to 16 dollars at Zanzibar. In Unyamwezi, where the sámesáme is in greatest demand, 1 fundo is equivalent to 1 shukkah merkani, and 6 khete to the shukkah kaniki.

2. Next in demand to the sámesáme, throughout the country, except at Ujiji, where they lose half their value, are the pink porcelain, called gulabi (the rosy), or máguru lá nzige (locust's feet). The price in Zanzibar varies from 12 to 15 dollars per frasilah.

3. The blue porcelain, called in Venice ajerino, and in East Africa langiyo or murtutu (blue vitriol), is of three several sizes, and the best is of the lightest colour. The larger variety, called langiyo mkuba, fetches, at Zanzibar, from 6 to 12 dollars per frasilah, and the p'heke, or smaller, from 7 to 9 dollars. In Usagara and Unyamwezi, where from 3 to 4 fundo are equivalent

* The average value of the khete in Zanzibar coin is 3 pice, and about 100 khete are included in the man or masund. The traveller will find the bitil used as our farthing, the khete is the penny, the shukkah kaniki is the sixpence and shilling, the shukkah merkani and the fundo represent the halfcrown and crown, whilst the Barsati cloth, the kitindi or coil-bracelet, and the larger measures of beads, form the gold money.

to the shukkah merkani, and 1 to 2 to the shukkah kaniki, it is used for minor purchases, where the sámesáme would be too valuable. It is little prized in other parts, and between Unyamwezi and Ujiji it falls to the low level of the white porcelain.

4. A local variety, current from Msene to the Tanganyika Lake, where, in the heavier dealings, as the purchase of slaves and ivory, a few strings are always required to cap the bargain, is called mzizima, mtunda, balghami, and jelabi, the ringel perle of Germany. It is a large flat bead of glass; the khete contains about 150, and each item acts as a copper coin. The mzizima is of two varieties; the more common is a dark blue, the other is of a whitish and opalline tint. At Zanzibar the frasilah costs from 7 to 9 dollars. In Unyamwezi 3 fundo are equivalent to 1 shukkah merkani, and 1 fundo to 1 shukkah kaniki.

5. Another local variety is the balghami mkuba, popularly called sungomaji, a bead made at Nuremberg (?). It is a porcelain, about the size of a pigeon's egg, and of two colours, white and light blue. The sungomaji, attached to a thin cord or twine, is worn singly or in numbers as an ornament round the neck, and the people complain that the polish soon wears off. At Zanzibar the price per 1000 is from 15 to 20 dollars, but it is expected to decline to 10 dollars. This bead is useful in purchasing ivory in Ugogo and Unyamwezi, and in hiring boats at Ujiji: its relative value to cloth is 19 per shukkah merkani, and 15 per shukkah kaniki.

6. The sofi, called in Italian cannettone, resembles bits of broken pipe-stems, about two-thirds of an inch in length. It is of various colours, white, brick-red, and black. Each bead is termed masaro, and is used like pice in India: of these the khete contains from 55 to 60. The price varies, at Zanzibar, from 2 to 3 dollars per frasilah; in the interior, however, the value greatly increases, on account of insufficient importation. This bead, in 1858, was in great demand throughout Usagara, Unyamwezi, and the western regions, where it was as valuable as the sámesáme. Having neglected to lay in a store at Zanzibar, the East African Expedition was compelled to exchange cloth for it at Msene and Ujiji, giving 1 shukkah merkani for 30 to 35 khete, and 1 shukkah kaniki for 15 to 25. In Ujiji, however, many of the purchases were rejected because the bits had become small by wear, or had been chipped off by use.

7. The staple of commerce is a coarse porcelain bead, of various colours, known in Zanzibar by the generic name of háfizi. There are three principal kinds. The khanyera or ushangwa waupa (white beads) are common throughout the country. The average value, at Zanzibar, is 6 dollars per frasilah: in Unyamwezi, 4 fundo were equivalent to the shukkah merkani, and 2 to 3 to the kaniki; but

the people, glutted with this bead (as many as 20,000 strings were supplied to the East African Expedition by the Banyans of Zanzibar), preferred 1 khete of sámesáme to 3 of khanyera. The kidunduguru is a dull brick-red bead, worth at Zanzibar from 5 to 7 dollars per frasilah, but little prized in the interior, where it is derisively termed khanyera ya mk'hundu. Another red variety of háfizi is called merkani : it is finely made to resemble the sámesáme, and costs from 7 to 11 dollars per frasilah. Of this bead there are four several subdivisions. The uzanzawírá or samuli (ghee-coloured) is a bright yellow porcelain, worth, at Zanzibar, from 7 to 9 dollars per frasilah. It is in demand throughout Chhaga and the Masai country, but is rarely seen on the central line.

8. The sukoli are orange-coloured or rhubarb-tinted porcelain, which average, at Zanzibar, from 7 to 9 dollars. They are prized in Usagara and Ugogo, but are little worn in other places.

9. The nilí (green), or ukutí wa mnazi (coco-leaves), are little beads of transparent green glass ; they are of three sizes, the smallest of which is called kikiti. The Zanzibar price is from 6 to 11 dollars. In Ujiji they are highly valued, and are readily taken in small quantities throughout the central line.

10. The ghbari (dust-coloured), or nya kifu (?) is a small dove-coloured bead, costing, in Zanzibar, from 7 to 8 dollars. It is used in Uzaramo, but its dulness of aspect prevents it being a favourite.

11. The lungenya or lak'ho is a coarse red porcelain, valued at 5 to 6 dollars in Zanzibar, and now principally exported to Uruwwa and the innermost regions of Central Africa.

12. The bubu (ububu ?), also called ukumwi and ushangya ya vipande, are black Venetians, dull dark porcelain, ranging, at Zanzibar, from 5 to 7 dollars. They are of fourteen sizes, large, medium, and small ; the latter are the most valued. These beads are taken by the Wazaramo. In Eastern Usagara and Unyamwezi they are called khuni or firewood, and they will not be received in barter except when they excite a temporary caprice.

The other beads, occasionally met with, are the sereketi, ovals of white or garnet-red, prized in Khutu ; choroko or mágiyo, dull green porcelains ; undriyo maupe (?), mauve-coloured, round or oval ; undriyo mausi (?), dark lavender ; asmani, sky-coloured glass ; and pusange, blue Bohemian glass beads, cut into facets. The people of the coast also patronize a variety of large fancy articles, flowered, shelled, and otherwise ornamented ; these, however, rarely find their way into the interior.

After piece goods and beads, the principal articles of traffic, especially on the northern lines and the western portion of the central route, are masango (in the singular sango), or brass wires,

called by the Arabs *hajúlah*.^{*} Nos. 4 or 5 are preferred. They are purchased in Zanzibar, when cheap, for 12 dollars, and when dear for 16 dollars per frasilah. When imported up country the frasilah is divided into three or four large coils, called by the Arabs *daur*, and by the Africans *khata*, for the convenience of attachment to the *banghy*-pole. Arrived at Unyanyembe they are converted by artisans into the *kitindi*, or coil-bracelets, described in the preceding pages. Each *daur* forms two or three of these bulky ornaments, of which there are about 11 to the frasilah, and the weight is thus upwards of 3 pounds. The charge for the cutting, cleaning, and twisting into shape is about 1 doti of domestics for 50 *kitindi*. The value of the *kitindi*, throughout Unyamwezi, in 1858, was 1 doti *merkani*; at Ujiji, where they are in demand for slaves and ivory, the price was doubled. Thus, the *kitindi*, worth 1 dollar each—when cheap, 9 are bought for 10 dollars—in Zanzibar, rises to 5 dollars in the Lake regions. *Kitindi* were formerly made of copper wire; it has fallen into disuse on account of its expense,—at Zanzibar from 15 to 20 dollars per frasilah. Large iron wires, called *senyenge*, are confined to Ugogo and the northern countries inhabited by the Wamasai. The East Africans have learned to draw fine wire, which they call *uzi wa shaba*[†] (brass thread); they also import from the coast Nos. 22 to 25, and employ them for a variety of decorative purposes, which have already been alluded to. The average price of this small wire at Zanzibar is 12 dollars per frasilah. As has been mentioned, sat or zinc, called by the Africans *bati* (tin), is made by the Wajiji.

The principal of the minor items are coloured cloths, called by the people “cloths with names:” of these, many kinds are imported by every caravan. In some regions, Ugogo for instance, the people will not sell their goats and more valuable provisions for plain piece-goods; their gross and gaudy tastes lead them to despise sober and uniform colours. The sultans invariably demand for themselves and their wives showy goods, and complete their *onga* or blackmail with domestics and indigo-dyed cottons, which they divide amongst their followers. Often, too, a bit of scarlet broadcloth thrown in at the end of a lengthened haggle opens a road and renders impossibilities possible.

The coloured cloths may be divided into three kinds,—woollens, cottons, and silks mixed with cotton. Of the former, the principal

* *Hajulah* in Arabic properly signifies an anklet. It is generally used in the debased Zanzibar dialect for the material as well as the ornament.

† In classical Arabic “*sifr*” is copper, and “*nuhas*” brass. The Omani, however, calls the former *nuhas ahmar* (red brass), and the latter *nuhas abyaz* (white brass). Similarly, the Wasawahili distribute the generic term “*shaba*” into *shaba nya khunda*, red, and *shaba nya upe*, white, brass.

varieties now imported* are Joho or broadcloth; of the second, beginning with the cheapest, are Barsati, Dabwani, Jamdani, Bandira, Shit (chintz), Khuzarangi, Ukaya, Sohari, Shali, Taujiri, Msutu, Kikoi, and Shazar or Mukunguru; the mixed and most expensive varieties are the Subai, Dewli, Sabuni, Khesi, and Masnafu.†

Joho (a corruption of the Arabic Johh) is a coarse article, either blue or scarlet. As a rule, even Asiatics ignore the value of broad-cloth, estimating it, as they do guns and watches, by the shine of the exterior: the African looks only at the length of the pile and the depth of the tint. The Zanzibar valuation of the cheap English article is usually 50 cents (2s. 1d.) per yard; in the interior rising rapidly through double and treble to four times that price, it becomes a present for a prince. At Ujiji and other great ivory-marts there is a demand for this article, blue as well as red; it is worn, like the shukkah merkani, round the loins by men and round the bosom by women, who, therefore, require a tobe or double length. At Unyanyembe there are generally pauper Arabs or Wasawahili artisans who can fashion the merchants' supplies into the kizbao or waistcoats affected by the African chiefs in imitation of their more civilised visitors.

Of the second division the cheapest is the Barsati, called by the Africans kitambi; it is a blue cotton cloth, with a broad red stripe extending along one quarter of the depth, the other three-quarters being dark blue; the red is either of European or Cutch dye. The former is preferred upon the coast for the purchase of copal. Of this Indian stuff there are three kinds, varying in size, colour, and quality; the cheapest is worth at Zanzibar (where, however, like dabwani, it is usually sold by the gorah of two uzar or loin-cloths) from 5 to 7 dollars per score; the second 10 dollars 50 cents; and the best 14 to 15 dollars. The barsati in the interior represents the doti or tobe of Merkani. On the coast it is a favourite article of wear with the poorer freemen, slaves, and women. Beyond the maritime regions the chiefs will often refuse a barsati, if of small dimensions and flimsy texture. Formerly the barsati was made of silk, and cost 7 dollars per loin-cloth. Of late years the Wanyamwezi have taken into favour the barsati or kitambi banyani; it is a thin white long cloth, called in Bombay kora (Corah, or cotton piece-goods), with a narrow reddish border of madder or other dye stamped in India or at Zanzibar. The piece of 39 yards, which is divided into 20 shukkah, costs at

* Blankets were introduced by the Arabs, but being unsuited to the climate and to the habits of the people they soon became a drag in the market.

† Travelling Arabs usually take a piece of baftah or white calico as kafan or shrouds for themselves or their companions in case of accidents. At Zanzibar the value of a piece of 24 yds. is 1 dollar 25 cents.

Bombay 4·50 Co.'s rs. ; at Zanzibar 2 dollars 50 cents ; and the price of printing the edge is 1 dollar 75 cents.

The dabwani is a kind of small blue and white check made at Maskat ; one fourth of its breadth is a red stripe, edged with white and yellow. This stuff, which from its peculiar stiffening of gum appears rather like grass-cloth than cotton, is of three kinds : the cheapest, dyed with Cutch colours, is much used in the far interior ; it costs at Zanzibar 12 dols. 50 cents per score of pieces, each two and a half yards long ;—the medium quality, employed in the copal trade of the coast, is stained with European dye, and superior in work ; the score of pieces, each 3 yards long, costs 30 dols. ;—and the best, which is almost confined to the island of Zanzibar, ranges from 40 to 45 dols. per kori. The dabwani is considered in the interior nearly double the value of the barsati, and it is rarely rejected unless stained or injured.

The jamdani is a sprigged or worked muslin imported from India : though much prized for turbans by the dignitaries of the maritime races, it is rarely carried far up the country. At Zanzibar the price of 10 yards is 1 dol., and the piece of 20 lengths, each sufficient for a turban, may be purchased for 15 dols.

The bandira (flag stuff) is a red cotton bunting imported from Bombay. It is prized in the interior by women. At Zanzibar the price of this stuff greatly varies ; when cheap the piece of 28 yards may be obtained for 2 dols. 50 cents, when dear it rises to 3 dols. 50 cents. It is sold by gorah of $7\frac{1}{2}$ shukkahs.

Shit, or chintz, is of many different kinds. The common English is a red cotton striped yellow and dark green ; it fetches from 1 dol. 50 cents to 2 dols. per piece of 28 yards, and is little prized in the interior. Those preferred, especially in Unyamwezi and Ujiji, are the French and Hamburg ; the former is worth at Zanzibar from 4 dols. 50 cents per piece of 35 yards to 5 dols. 50 cents per gorah of 10 shukkahs, and the latter from 5 dols. to 5 dols. 50 cents. The most expensive is the "ajemi," that used by the Persians as lining for their lambswool caps ; the price is from 50 cents to 1 dol. per yard, which renders it a scarce article even in Zanzibar island.

The khuzarangi, a European cotton dyed a reddish nankeen, with pomegranate rind and other colouring matters, at Maskat, is almost confined to the Arabs, who make of it their normal garment, the long and sleeved shirt called el dishdashab, or in Kisawahili khanzu. It is the test of foreign respectability and decorum when appearing amongst the half-clad African races, and the poorest of pedlers will always carry with him one of these nightgown-like robes. The price of the ready-made dishdashah ranges from 50 cents to 2 dols. 50 cents, and the uncut piece of 16 yards costs from 2 dols. to 2 dols. 50 cents.

The ukaya somewhat resembles the kaniki, but it is finer and thinner. This jaconnet, manufactured in Europe and dyed in Bombay, is much used by female slaves and concubines as head veils. The price of the piece of 20 yards, when of inferior quality, is 2 dollars 50 cents; it ranges as high as 12 dollars.

The sohari, or ridia, made at Maskat, is a blue and white check with a red border about 5 inches broad, with smaller stripes of red, blue, and yellow: the ends of the piece are checks of a larger pattern, with red introduced. There are many varieties of this cloth, which, considered as superior to the dabwani as the latter is superior to the barsati, forms an acceptable present to a chief. The cheapest kind, much used in Unyamwezi, costs 16 dollars 25 cents per kori, or score. The higher sorts, of which however only 1 to 40 of the inferior is imported into the country, ranges from 22 to 30 dollars.

The shali, a corruption of the Indian shal (shawl), is a common English imitation shawl pattern of the poorest cotton. Bright yellow or red grounds, with the pear-pattern and similar ornaments, are much prized by the chiefs of Unyamwezi. The price of the kori, or score, is 25 dollars.

The taujiri (from the Indian taujir burá) is a dark blue cotton stuff, with a gaudy border of madder-red or turmeric-yellow, the former colour preferred by the Wahiao, the latter by the Wanyamwezi. The price per score varies from 8 to 17 dollars.

The msutu is a European cotton dyed at Surat, indigo blue upon a madder-red ground, spotted with white. This print is much worn by Arab and Wasawahili women as a nightdress and morning wrapper; in the interior it becomes a robe of ceremony. At Zanzibar the piece of 20 lengths, each 2·25 yards long and 40 inches broad (two breadths being sown together), costs 19 dollars. The kisutu, an inferior variety, fetches, per kori of pieces 2·50 yards long, 13 dollars.

The kikoi is a white cotton, made at Surat, coarse and thick, with a broad border of parallel stripes, red, yellow, and indigo blue: per kori of pieces 2 yards long, and sown in double breadths, the price is 5 dollars. A superior variety is made principally for the use of women, with a silk border, which costs from 1 to 4 dollars.

The shazar, called throughout the interior mukunguru, is a Cutch-made cotton plaid, with large or small squares, red and white, or black and blue; this cloth is an especial favourite with the Wamasai tribes. The score of pieces, each 2 yards, is worth 6 dollars 25 cents. There is a dearer variety, of which each piece is 3 yards long, costing 16 dollars per kori, and therefore rarely sold.

Of the last division of "cloths with names," namely those of silk and cotton mixed, the most popular is the subai. It is a striped

stuff, with small checks between the lines, and with a half-breadth of border, a complicated pattern of red, black, and yellow. This cloth is used as an *uzar*, or loin-cloth, by the middle classes of Arabs; the tambua, taraza, or fringe, is applied to the cloth with a band of gold thread at Zanzibar, by Wasawahili. The subai made at Maskat of Cutch cotton varies greatly in price: the cheapest, of cotton only, may be obtained for 2 dollars; the medium, generally preferred for presents to great chiefs, is about 5 dollars 50 cents; whilst the most expensive, inwoven with gold thread, ranges from 8 to 30 dollars.

The dewli is the Indian lungi, a Surat silk, garnished with a border of gold thread and a fringe at Zanzibar. It is a red, yellow, or green ground, striped in various ways, and much prized for *uzar*. The price of the cheap piece of 3·50 yards is 7 dollars, besides the fringe which is 2 dollars more; the best, when adorned with gold, rise to 80 dollars.

The sabuni *uzar*, made in Maskat, is a silk-bordered cotton, a small blue and white check; the red and yellow edging which gives it its value is about one-fifth of its breadth. The score of pieces, each 2·50 yards long, varies from 25 to 50 dollars; the more expensive, however, rarely find their way into the interior.

The khesi is a rare importation from Bombay, a scarlet silk, made at Tannah; the piece sold at Bombay for 10 Co.'s rs. fetches at Zanzibar 5 dols. 50 cents to 6 dollars; this kind is preferred by the Wanyamwezi chiefs; when larger, and adorned with gold stripes, it rises to 35 Co.'s rs., or 19 dollars, and is prized by the Banyans and Hindus of Zanzibar.

The masnafu is rare like the khesi; it is a mixed silk and cotton cloth, of striped pattern, made at Maskat. The cheapest is a piece of 1·75 yards, costing from 2 to 5 dollars, and highly regarded in Unyamwezi; the larger kinds, of 2·50 yards, rise from 5 to 6 dollars, and the Arabs will pay from 20 to 25 dollars for those worked with gold thread.

These notes upon the prices of importations into Central Africa rest upon the authority of the Hindus, and principally of Ladha Danha, the collector of customs at Zanzibar. Specimens of the cloths were deposited with the Royal Geographical Society of London, and were described by the kindness of Mr. Alderman Botterill, F.R.G.S.

Remain for consideration the minor and local items of traffic.

The skull-caps are of two kinds. One is a little fez, locally called *kummah*. It is made in France, rarely at Bagdad, and sells at Zanzibar for 5 dols. 50 cents to 9 dollars per dozen. The cheaper kind is preferred in Unyamwezi; it is carried up from the coast by Arab slaves and Wasawahili merchants, and is a favourite wear with the sultan and the mtongi. At Unyanyembe

the price of the fez rises to 1 dollar. The "alfiyyah" is the common Surat cap, worked with silk upon a cotton ground ; it is affected by the Diwans and Shomwis of the coasts. The "vis-gol," or 20-stitch, preferred for importation, cost 8 dollars per score ; the "tris-gol," or 30-stitch, 13 dollars ; and the "chalis-gol," or 40-stitch, 18 dollars.

Besides these articles a little hardware finds its way into the country. Knives, razors, fish-hooks, and needles are useful, especially in the transit of Uzaramo. As an investment they are useless ; the people, who make for themselves an article which satisfies their wants, will not part with valuables to secure one a little better. They have small axes and sharp spears, consequently they will not buy dear cutlery ; they have gourds, and therefore they care little for glass and china. The Birmingham trinkets and knicknacks, of which travellers take large outfits to savage and barbarous countries, would in East Africa be accepted by women and children as presents, but unless in exceptional cases they would not procure a pound of grain ; mirrors are cheap and abundant at Zanzibar, yet they are rarely imported into the interior. The people will devise new bijouterie for themselves, but they will not borrow it from strangers. In the maritime regions, where the tribes are more civilized, they covet such foreign contrivances as dollars and blankets, snuff-boxes and tin cylinders, which can be converted into tobacco pouches : the Wanyamwezi do not regard them. Similarly in Somaliland a case of Birmingham goods carried through the country returned to Aden almost full.

Coffee, sugar, and soap may generally be obtained in small quantities from the Arabs of Unyanyembe. At Zanzibar the price of common coffee is 3 dollars 75 cents, and of Mocha 5 dollars 50 cents per frasilah. Sugar is of three kinds : the buluji, or loaf-sugar, imported from America, averages 6 annas ; sukkari za mawe, or sugar-candy, fetches upon the island 5 dollars 50 cents per frasilah ; and the bungálá, or sukkari za mchanga (brown Bengal sugar), costs 3 dollars 50 cents ; gur, or molasses, sells at Zanzibar for 1 dollar 25 cents per frasilah. Soap is brought to Zanzibar island by the Americans, French, and India merchants.

The other articles of importation into Zanzibar, which however so rarely find their way into the interior that they do not merit detailed notice, are—rice and other cereals from Bombay and Western India ; shipping materials, canvas, rigging, hempen cord, planks and boards, paint, pitch, turpentine, linseed-oil, bees-wax, and tar, from America and India ; metals from Europe and India ; furniture from Europe and America, China and Bombay ; carpets and rugs from Turkey and Persia ; mats from Madagascar ; made-up clothes from Maskat and Yemen ; glass ware from Europe and America ; pottery, paper, and candles

from Europe and Bombay ; kuzah (water-jars) from the Persian Gulf ; woods and timber from Madagascar, the Mozambique, and the coast as far north as Mombasah ; skins and hides from the Benadir ; salt-fish (shark and others) from Oman, Hazramaut, and the Benadir ; brandy, rum, peppermint, eau de Cologne, syrups and pickles, tobacco, cigars, and tea, from Bombay, France, and the Mauritius ; rose-water from the Gulf ; attar of rose and of sandal from Bombay ; dates, almonds, and raisins from Arabia and the Gulf ; gums and ambergris from Madagascar, the Mozambique, and the "Sayf-Tawil" (the long low coast extending from Ras Awath, in N. lat. $5^{\circ} 33'$, to Ras el-Khayl, N. lat. $7^{\circ} 44'$) ; aloes and dragon's-blood from Socotra ; incense, gum Arabic, and myrrh from the Somali country and the Banadir ; turmeric, opium, ginger, nutmegs, colombo-root, cardamoms, cinnamon, aniseed, camphor, benzoin, assafoetida, saltpetre, potash, blue vitriol, alum, soda, saffron, garlic, fenugreek, and other drugs and spices from Bombay and Western India.

The staple articles of the internal trade throughout the regions extending from the coast of the Indian Ocean to the lakes of Central Africa are comprised in slaves and cattle, salt, iron, tobacco, mats and strainers, and tree-barks and ropes. Of these, all except salt have been noticed in detail in the preceding pages.

Salt is brought down during the season from East Arabia to Zanzibar by Arab dows, and is heaped up for sale on a strip of clear ground under the eastern face of the gurayza or fort. It is of two kinds : the fine rock salt sells at 6 annas per frasilah, and the inferior, which is dark and sandy, at about half that price. On the coast the principal ports and towns supply themselves with sea-salt evaporated in the rudest way. Pits sunk near the numerous lagoons and backwaters allow the saline particles to infiltrate ; the contents, then placed in a pierced earthen pot, are allowed to strain into a second beneath. They are inspissated by boiling and are finally dried in the sun, when the mass assumes the form of sand. This coarse salt is sold after the rains, when it abounds, for its weight of holcus ; when dear, the price is doubled. In the interior there are two great markets, and the regularity of communication enables the people to fare better as regards the luxury than the more civilized races of Abyssinia and Harar, where of a millionaire it is said "he eateth salt." An inferior article is exported from Ugogo, about half-way between the East Coast and the Tanganyika Lake. A superior quality is extracted from the pits near the Rusugi River in Western Uvinza, distant but a few days from Ujiji. For the prices and other conditions of sale the reader is referred to Chapters V. and VII.

The subject of exports will be treated of at some length ; it is not only interesting from its intrinsic value, it is capable of con-

siderable development, and it also offers a ready entrance for civilization. The African will never allow the roads to be permanently closed—none but the highly refined amongst mankind can contemplate with satisfaction a life of utter savagery. The Arab is too wise to despise “protection,” but he will not refuse to avail himself of assistance offered by foreigners when they appear as capitalists. Hitherto British interests have been neglected in this portion of the African continent, and the name of England is unknown in the interior. Upon the island of Zanzibar, in 1857-8, there was not an English firm; no line of steamers connected it with India or the Cape, and, during the dead season, nine months have elapsed before the answer to a letter has been received from home.

The reader is warned that amongst the East Africans the “bay o shara”—barter or round trade—is an extensive subject, of which only the broad outlines and general indications can be traced. At present, the worthlessness of time enables both buyer and seller to haggle *ad libitum*, and the superior craft of the Arab, the Banyan, the Wasawahili, and the more civilized slave, has encumbered with a host of difficulties the simplest transactions. It is easy to be a merchant and to buy wholesale at Zanzibar, but a lengthened period of linguistic study and of conversancy with the habits and customs of the people must be spent by the stranger who would engage in the task of retail-buying in the interior.

The principal article of export from the Zanzibar coast is copal, from the interior ivory. The minor items are hippopotamus, teeth, rhinoceros' horns, cattle, skins, hides, and horns, the cereals, timbers, and cowries. Concerning the slaves, who in East Africa still form a considerable item of export, details have been given in the preceding pages. The articles which might be exploited, were means of carriage supplied to the people, are wax and honey, orchella-weed, fibrous substances, and a variety of gums.

The copal of Zanzibar, which differs materially from that of the Western Coast of Mexico and the cowee (Australian dammar?) of New Zealand, is the only article convertible into the fine varnishes now so extensively used throughout the civilized world.

The copal-tree* is called by the Arabs *shajar el sandarus*, from the Hindostani *chhandarus*; by the Wasawahili *msandarusi*; and by the Wazaramo and other maritime races *mnángú*. The tree still lingers on the island and the mainland of Zanzibar. It was observed at Mombasah, Saadani, Muhonyera, and Mzegero of

* As the attention of the Expedition was particularly directed to the supplies of copal in East Africa by Dr. G. Buist, LL.D., Secretary to the Bombay branch of the R. G. Society, many inquiries and visits to the copal diggings were made. In the early part of 1857 specimens of the soils and subsoils and of the tree itself were forwarded to the Society.

Uzaramo; and was heard of at Bagamoyo, Mbuamaji, and Kilwa. It is by no means, as some have supposed, a shrubby thorn; its towering bole has formed canoes 60 feet long, and a single tree has sufficed for the kelson of a brig. The average size, however, is about half that height, with from 3 to 6 feet girth near the ground; the bark is smooth, the lower branches are often within reach of a man's hand, and the tree frequently emerges from a natural ring-fence of dense vegetation. The trunk is of a yellow-whitish tinge, rendering the tree conspicuous amid the dark African jungle-growths; it is dotted with exudations of raw gum, which is found scattered in bits about the base; and it is infested by ants, especially by a long ginger-coloured and semi-transparent variety, called by the people maji-m'oto, or "boiling water," from its fiery bite. The copal wood is yellow tinted, and the saw collects from it large flakes; when dried and polished it darkens to a honey-brown, and, being well veined, it is used for the panels of doors. The small and pliable branches, freshly cut, form favourite "bakur," the kurabaj or bastinadoing instrument of these regions; after long keeping they become brittle. The modern habitat of the tree is the alluvial sea-plain and the anciently raised beach: though extending over the crest of the latter formation, it ceases to be found at any distance beyond the landward counterslope, and it is unknown in the interior.

The gum copal* is called by the Arabs and Hindus sandarus, by the Wasawahili sandarusi, and by the Wanyamwezi—who employ it like the people of Mexico and Yucatan as incense in incantations and medicinings—sirokko and máminángu. This semi-fossil is not "washed out by streams and torrents," but "crowed" or dug up by the coast clans and the barbarians of the maritime region. In places it is found when sinking piles for huts, and at times it is picked up in spots overflowed by the high tides. The East African seaboard, from Ras Gomani in s. lat. 3° to Ras Delgado in $10^{\circ} 41'$, with a medium depth of 30 miles, may indeed be called the "copal coast;" every part supplies more or less the gum of commerce. Even a section of this line, from the mouth of the Pangani River to Ngao (Monghou), would, if properly exploited, suffice to supply all our present wants.

The Arabs and Africans divide the gum into two different kinds. The raw copal (copal vert of the French market) is called sandarusi za miti, "tree copal," or chakázi, corrupted by the

* Our word copal is said to be Mexican. The gum is often confounded with gum animi, which differs from it, however, by being soluble in alcohol and by softening in the mouth. When burnt the copal exhales a faint aromatic odour. Properly speaking, copal is not a gum, as it does not dissolve in water; moreover, it is not affected by sun or by heat. According to some informants, it may be dissolved in linseed and other oils by adding a small lump of camphor.

Zanzibar merchant to "jackass" copal. This chakazi is either picked from the tree or is found, as in the island of Zanzibar, shallowly imbedded in the loose soil, where it has not remained long enough to attain the phase of bitumenization. To the eye it is smoky or clouded inside, it feels soft, it becomes like putty when exposed to the action of alcohol, and it viscidizes in the solution used for washing the true copal. Little valued in European technology, it is exported to Bombay, where it is converted into an inferior varnish for carriages and palanquins, and to China, where the people have discovered, it is said, for utilizing it, a process which, like the manufacture of rice paper and of Indian ink, they keep secret. The price of chakazi varies from 4 to 9 dollars per frasilah.

The true or ripe copal, properly called sandarusi, is the produce of vast extinct forests, overthrown in former ages either by some violent action of the elements, or exuded from the roots of the tree by an abnormal action which exhausted and destroyed it. The gum, buried at depths beyond atmospheric influence, has, like amber and similar gum-resins, been bitumenized in all its purity, the volatile principles being fixed by moisture and by the exclusion of external air. That it is the produce of a tree is proved by the discovery of pieces of gum embedded in a touchwood which crumbles under the fingers; the "goose-skin," which is the impress of sand or gravel, shows that it was buried in a soft state; and the bees, flies, gnats, and other insects which are sometimes found in it delicately preserved, seem to disprove a remote geologic antiquity. At the end of the rains it is usually carried ungarbled to Zanzibar. When garbled upon the coast it acquires an additional value of 1 dollar per frasilah. The Banyan embarks it on board his own boat, or pays a freight varying from 2 to 4 annas, and the ushur or government tax is 6 annas per frasilah with half an anna for charity. About 8 annas per frasilah are deducted for "tare and tret." At Zanzibar, after being sifted and freed from heterogeneous matter, it is sent by the Banyan retailer to the Indian market or sold to the foreign merchant. It is then washed in solutions of various strengths: the lye is supposed to be composed of soda and other agents for softening the water; its proportions, however, are kept a profound secret. European technologists have, it is said, vainly proposed theoretical methods for the delicate part of the operation which is to clear the goose-skin of dirt. The Americans exported the gum uncleansed, because the operation is better performed at Salem. Of late years they have begun to prepare it at Zanzibar, like the Hamburg traders. When taken from the solution, in which from 20 to 37 per cent. is lost the gum is washed, sun-dried for some hours, and cleaned with a hard brush, which must not, however, injure the goose-skin; the

dark "eyes," where the dirt has sunk deep, are also picked out with an iron tool. It is then carefully garbled with due regard to colour and size. There are many tints and peculiarities known only to those whose interests compel them to study and to observe copal, which, like cotton and Cashmere shawls, requires years of experience. As a rule, the clear and semi-transparent are the best; then follow the numerous and almost imperceptible varieties of dull-white, lemon-colour, amber-yellow, rhubarb-yellow, bright-red, and dull-red. Some specimens of this vegetable fossil appear by their dirty and blackened hue to have been subjected to the influence of fire; others again are remarkable for a tender grass-green colour. According to some authorities, the gum, when long kept, has been observed to change its tinge. The sizes are fine, medium, and large, with many subdivisions; the pieces vary from the dimensions of small pebbles to 2 or 3 ounces; they have been known to weigh 5 lbs., and, it is said, at Salem a piece of 35 lbs. is shown. Lastly, the gum is thrown broadcast into boxes and exported from the island. The Hamburg merchants keep European coopers, who put together the cases whose material is sent out to them. It is almost impossible to average the export of copal from Zanzibar. According to the late Lieutenant-Colonel Hamerton, it varies from 800,000 to 1,200,000 lbs. per annum, of which Hamburg absorbs 150,000 lbs., and Bombay two lacs' worth. The refuse copal used formerly to reach India as "packing," being deemed of no value in commerce; of late years the scarcity of the supply has rendered merchants more careful. The price, also, is subject to incessant fluctuations, and during the last few years it has increased from 4 dol. 50 cents to a maximum of 12 dollars per frasilah.

According to the Arabs, the redder the soil the better is the copal. The superficies of the copal country is generally a thin coat of white sand, covering a dark and fertilizing humus, the vestiges of decayed vegetation, which varies from a few inches to a foot and a half in depth. In the island of Zanzibar, which produces only the chakazi or raw copal, the subsoil is a stiff blue clay, the raised sea-beach, and the ancient habitat of the coco. It becomes greasy and adhesive, clogging the hoe in its lower bed; where it is dotted with blood-coloured fragments of ochreish earth, proving the presence of oxidising and chalybeate efficients, and with a fibrous light-red matter, apparently decayed coco-roots. At a depth of from 2 to 3 feet water oozes from the greasy walls of the pit. When digging through these formations, the gum copal occurs in the vegetable soil overlying the clayey subsoil.

A visit to the little port of Saadani afforded different results. After crossing 3 miles of alluvial and maritime plain, covered with a rank vegetation of spear-grass and low thorns, with occasional mimosas and tall hyphaenas, which have supplanted the coco,

the traveller finds a few scattered specimens of the living tree and pits dotting the ground. The diggers, however, generally advance another mile to a distinctly formed sea-beach, marked with lateral bands of quartzose and water-rolled pebbles, and swelling gradually to 150 feet from the alluvial plain. The thin but rich vegetable covering supports a luxuriant thicket, the subsoil is red and sandy, and the colour darkens as the excavation deepens. After 3 feet, fibrous matter appears, and below this copal, dusty and comminuted, is blended with the red ochreish earth. The guides assert that they have not hit upon the subsoil of blue clay, but they never dig lower than a man's waist, and the pits are seldom more than 2 feet in depth. Though the soil is red, the copal of Saadani is little prized; being of a dull white colour, it is usually designated as "chakazi."

On the line inland from Bagamoyo and Kaole the copal-tree was observed at rare intervals in the forests, and the pits extended as far as Muhonyera, about 40 miles in direct distance from the coast. The produce of this country, though not first-rate, is considered far superior to that about Saadani.

Good copal is dug in the vicinity of Mbuamaji, and the diggings are said to extend to 6 marches inland. The Wadenkereko, a wild tribe, mixed with and stretching southwards of the Wazaramo, at a distance of two days' journey from the sea, supply a mixed quality, more often white than red. The best gums are procured from Hunda and its adjacent districts. Frequent feuds with the citizens deter the wild people from venturing out of their jungles, and thus the Banyans of Mbuamaji find two small dows sufficient for the carriage of their stores. At that port the price of copal varies from 2 dol. 50 cents to 3 dollars per frasilah.

The banks of the Rufiji River,* especially the northern district of Wände, supply the finest and best of copal; it is dug by the Wawande tribe, who either carry it to Kikunya and other ports or sell it to travelling hucksters. The price in loco is from 1 dol. 50 cents to 2 dollars per frasilah; on the coast it rises to 3 dol. 50 cents. At all these places the tariff varies with the Bombay market, and in 1858 little was exported owing to the enlistment of "free labourers."

In the vicinity of Kilwa, for 4 marches inland, copal is dug up by the Mandandu and other tribes; owing to the facility of carriage and the comparative safety of the country it is somewhat dearer than that purchased on the banks of the Rufiji. The copal of Ngao (Monghou) and the Lindi creek is much cheaper than

* Pedro Rezende, Secretary to the Count of Linhares ('Breve Tratado,' &c., anno 1635, quoted by Mr. Guillain, in a work before alluded to), mentions amongst the exports from Monfia (Mafiyah island) a quantity of resin, which appears to be copal procured from the banks of the Rufiji River.

at Kilwa ; the produce, however, is variable in quality, being mostly a dull-white chakazi.

Like that of East African produce generally, the exploitation of copal is careless and desultory. The diggers are of the lowest classes, and hands are much wanted. Near the seaboard it is worked by the fringe of Moslem negroids called the Wamrima or Coast clans ; each gang has its own mtu mku or akida'ao (mu-caddum—headman), who, by distributing the stock, contrives to gain more and to labour less than his followers. In the interior it is exploited by the Washenzi or heathen, who work independently of one another. When there is no blood-feud they carry it down to the coast, otherwise they must await the visits of petty retail dealers from the ports, who enter the country with ventures of 10 or 12 dollars, and barter for it cloth, beads, and wire. The kosi—south-west or rainy monsoon—is the only period of work ; the kaskazi or dry season is a dead time. The hardness of the ground is too much for the energies of the people : moreover, "kaskazi copal" gives trouble in washing on account of the sand adhering to its surface, and the flakes are liable to break. As a rule, the apathetic Moslem and the futile heathen will not labour whilst a pound of grain remains in their huts. The more civilized use a little jembe or hoe, an implement about as efficient as the wooden spade with which an English child makes dirt-pies.

The people of the interior "crow" a hole about 6 inches in diameter with a pointed stick, and scrape out the loosened earth with the hand as far as the arm will reach. They desert the digging before it is exhausted ; and although the labourers could each, it is calculated, easily collect from 10 to 12 lbs. per diem, they prefer sleeping through the hours of heat, and content themselves with as many ounces. Whenever upon the coast there is a blood-feud—and these are uncommonly frequent—a drought, a famine, or a pestilence, workmen strike work, and cloth and beads are offered in vain. It is evident that the copal-mine can never be regularly and efficiently worked as long as it continues in the hands of such unworthy miners. The energy of Europeans, men of capital and purpose, settled on the seaboard with gangs of foreign workmen, would soon remedy existing evils ; but they would require not only the special permission, but also the protection of the local government. And although the intensity of the competition principle amongst the Arabs has not yet emulated the ferocious rivalry of civilization, the new settlers must expect considerable opposition from those in possession. Though the copal diggings are mostly situated beyond the jurisdiction of Zanzibar, the tract labours under all the disadvantages of a monopoly : the diwans, the heavy merchants, and the petty traders of the coast derive from it, it is supposed, profits varying from 80 to

100 per cent. Like other African produce, though almost dirt-cheap, it becomes dear by passing through many hands, and the frasilah, worth from 1 to 3 dollars in the interior, acquires a value of from 8 to 9 dollars at Zanzibar.

Zanzibar is the principal mart for perhaps the finest and largest ivory in the world. It collects the produce of the lands lying between the parallels of 2° N. lat. and 10° S. lat., and the area extends from the coast to the regions lying westward of the Tanganika Lake. It is almost the only legitimate article of traffic for which caravans now visit the interior.

An account of the ivory markets in Inner Africa will remove sundry false impressions. The Arabs are full of fabulous reports concerning regions where the article may be purchased for its circumference in beads, and greed of gain has led many of them to danger and death. Wherever tusks are used as cattle-pens or to adorn graves, the reason is that they are valueless on account of the want of conveyance.

The elephant has not wholly disappeared from the maritime regions of Zanzibar. It is found, especially during the rainy monsoon, a few miles behind Pangani town: it exists also amongst the Wazegura, as far as their southern limit, the Gama River. The Wadœ hunt the animal in the vicinity of Shakini, a peak within sight of Zanzibar. Though killed out of Uzaramo and Khutu, it is found upon the banks of the Kingani and the Rufiji rivers. The coast people now sell their tusks for 30 to 35 dollars' worth of cloth, beads, and wire per frasilah.

In Western Usagara the elephant extends from Maroro to Ugogi. The people, however, being rarely professional hunters, content themselves with keeping a look-out for the bodies of animals that have died of thirst or of wounds received elsewhere. As the chiefs are acquainted with the luxuries of the coast, their demands are fantastic. They will ask, for instance, for a large tusk—the frasilah is not used in inland sales—a copper caldron worth 15 dollars; a khesi, or fine cloth, costing 20 dollars; and a variable quantity of blue and white cottons: thus, an ivory, weighing perhaps 3 farasilah, may be obtained for 50 dollars.

Ugogo and its encircling deserts are peculiarly rich in elephants. The people are eminently hunters, and, as has been remarked, they trap the animals, and in droughty seasons they find many dead in the jungles. Ivory is somewhat dearer in Ugogo than in Unyamwezi, as caravans rarely visit the coasts. It is generally bartered to return caravans for slaves brought from the interior: of these, five or six represent the value of a large tusk.

The ivory of Unyamwezi is collected from the districts of Mgunda Mkhali, Usukuma, Umunda, Usagozi, and other adjacent regions. When the "Land of the Moon" was first visited by the

Arabs they purchased, it is said, 10 farasilah of ivory with 1 frasilah of the cheap white or blue porcelains. The price is now between 30 and 35 dollars per frasilah in cloth, beads, and wire. The Africans, ignoring the frasilah, estimate the value of the tusk by its size and quality; and the Arabs ascertain its exact weight by steelyards. Moreover, they raise the weight of what they purchase to 48 lbs., and diminish that which they sell to 23·50 lbs., calling both by the same name, frasilah. When the Arab wishes to raise an outfit at Unyanyembe he can always command 3 gorahs of domestics (locally worth 30 dollars) per frasilah of ivory. Merchants visiting Karagwah, where the ivory is of superior quality, lay in a stock of white, pink, blue, green, and coral beads, and brass armlets, which must be made up at Unyanyembe to suit the tastes of the people. Cloth is little in demand. For 1 frasilah of beads and brass wire they purchase about one and a half of ivory. At K'hokoro the price of tusks has greatly risen; a large specimen can scarcely be procured under 40 doti of domestics, 1 frasilah of brass wire, and 100 fundo of coloured beads. The tusks collected in this country are firm, white, and soft, sometimes attaining the weight of 6 farasilah (210 lbs.). The small quantity collected in Ubena, Urori, and the regions east of the Tanganyika Lake, resembles that of K'hokoro.

The ivory of Ujiji is collected from the provinces lying around the northern third of the lake, especially from Urundi and Uvira. These tusks have one great defect; though white and smooth when freshly taken from the animal, they put forth after a time a sepia-coloured or dark brown spot, extending like a ring over the surface, which gradually spreads and injures the texture. Such is the "Jundai" or "Gundai" ivory, well known at Zanzibar: it is apt to flake off outside, and is little prized on account of its lightness. At Ujiji tusks were cheap but a few years ago, now they fetch an equal weight of porcelain or glass beads, in addition to which the owners—they are generally many—demand from 4 to 8 cloths. Competition, which amongst the Arabs is usually somewhat unscrupulous, has driven the ivory-merchant to regions far west of the Tanganyika, and geography will thrive upon the losses of commerce.

The process of elephant-hunting, the complicated division of the spoils, and the mode of transporting tusks to the coast, have already been described. A quantity of ivory, as has appeared, is wasted in bracelets, armlets, and other ornaments. This would not be the case were the imports better calculated to suit the tastes of the people. At present the cloth-stuffs are little prized, and the beads are not sufficiently varied for barbarians who, eminently fickle, require change by way of stimulant. The Arabs seek in ivory six qualities: it must be white, heavy, soft, thick—especially at the point—gently curved—when too much bent it loses from

10 to 14 per cent.—and it must be marked with dark surface-lines like cracks running longitudinally towards the point. It is evident from the preceding details that the Arab merchants gain but little beyond a livelihood in plenty and dignity by their expeditions to the interior. An investment of 1000 dollars rarely yields more than 70 farasilah (2450 lbs.) Assuming the high price of Zanzibar at an average of 50 dollars per frasilah, the stock would be worth 3500 dollars—a net profit of 2500 dollars. Against this, however, must be set off the price of portage and rations—equal to at least 5 dollars per frasilah—the enormous interest upon the capital, the wastage of outfit, and the risk of loss, which, upon the whole, is excessive. Though time, toil, and sickness, not being matters of money, are rarely taken into consideration by the Eastern man, they must be set down on the loss side of the account. It is therefore plain that commercial operations on such a scale can be remunerative only to a poor people, and that they can be rendered lucrative to capitalists only by an extension and a development which, depending solely upon improved conveyance, must be brought about by the energy of Europeans. For long centuries past and for centuries to come the Semite and the Hamite have been and will be contented with human labour. The first thought which suggests itself to the sons of Japhet is a tramroad from the coast to the Lake regions.

The subject of ivory as sold at Zanzibar is as complicated as that of sugar in Great Britain or of cotton in America. A detailed treatise would here be out of place, but the following notices may serve to convey an idea of the trade.

The merchants at Zanzibar recognise in ivory, the produce of these regions, three several qualities. The best, a white, soft, and large variety, with small bamboo, is that from the Banadir, Brava, Makdishi, and Marka. A somewhat inferior kind, on account of its hardness, is brought from the countries of Chaga, Umasai, and Nguru. The Wamasai often spoil their tusks by cutting them, for the facility of transport; and, like the people of Nguru and other tribes, they stain the exterior by sticking the tooth in the sooty rafters of their chimneyless huts, with the idea that so treated it will not crack or split in the sun. This red colour, erroneously attributed at Zanzibar to the use of ghee, is removed by the people with blood, or cowdung mixed with water. Of these varieties the smaller tusks fetch from 40 to 50 dollars; if they attain a length of 6 feet, the price would be 12*l.*; and some choice specimens 7½ feet long fetch 60*l.* A lot of 47 tusks was seen to fetch 1500*l.*; the average weight of each was 95 lbs., 80 being considered moderate, and from 70 to 75 lbs. poor.

The second quality is that imported from the regions about the Nyassa Lake, and carried to Kilwa by the Wabisia, the Wahiao,

the Wangindo, the Wamakua, and other clans. The "Bisha ivory" formerly found its way to the Mozambique, but the barbarians have now learned to prefer Zanzibar; and the citizens welcome them, as they sell their stores more cheaply than the Wahiao, who have become adepts in coast arts. The ivory of the Wabisa, though white and soft, is generally small, the full length of a tusk being 7 feet. The price of the "bab kalasi"—scrivellois or small tusks, under 20 lbs.—is from 24 to 25 dollars; and the value increases at the rate of somewhat less than 1 dollar per lb. The "bab gujrati or kashshi,"*—medium size of 20 to 45 lbs.—fetches 56 to 60 dollars. The "bab wilaiti,"† or large, which ranges from 45 to 100 lbs., may be purchased for 52 dollars per frasilah.

The third and least valued quality is the western ivory, the Gendai, and other varieties imported from Usagara, Uhehe, Urori, Unyamwezi, and its neighbourhood. The price varies according to size, form, and weight, from 45 to 56 dollars per frasilah.

The transport of ivory to the coast, and the profits derived by the maritime settlers, Arab and Indian, have been described. When all fees have been paid, the tusk, guarded against smuggling by the custom-house stamp, is sent to Zanzibar. On the island scrivellois under 6 lbs. in weight are not registered. According to the late Lieutenant-Colonel Hamerton, the annual average of large tusks is not less than 20,000. The people of the country make the weight range between 17,000 and 25,000 farasilah. The tusk is larger at Zanzibar than elsewhere. At Mozambique, for instance, 60 lbs. would be considered a good average for a lot. Monster tusks are spoken of. Specimens of 5 farasilah are not very rare, and the people have traditions that these wonderful armatures have extended to 227 lbs., and even to 280 lbs. each.

Amongst the minor articles of export from the interior, hippopotamus teeth have been enumerated. Beyond the coast, however, they form but a slender item in the caravan load. In the inner regions they are bought in retail; the price ranges between 1 and 2 fundo of beads, and at times 3 may be procured for a shukkah. On the coast they rise, when fine, to 25 dollars per frasilah. At Zanzibar a large lot, averaging 6 to 8 lbs. in weight (12 lbs. would be about the largest), will sell for 60 dollars; per frasilah of 5 lbs. from 40 to 45 dollars; whilst the smallest fetch

* The bab kashshi is that intended for the Cutch market. The tusk must be of middling size, little bent, very bluff at the point (it is intended for rings and armlets); the girth must be a short span and three fingers, the bamboo shallow and not longer than a hand. Ivory fulfilling all these conditions will sell as high as 70 dollars per frasilah.

† The bab wilaiti, or "foreign sort," is that purchased in European and American markets. The largest size is preferred.

from 5 to 6 dollars. Of surpassing hardness, they are still used in Europe for artificial teeth. In America porcelain bids fair to supplant them.

The gargatan (karkadan ?), or small black rhinoceros with a double horn, is as common as the elephant in the interior. The price of the horn is regulated by its size ; a small specimen is to be bought for 1 jembe or iron hoe. When large the price is doubled. Upon the coast a lot fetches from 6 to 9 dollars per frasilah, which at Zanzibar increases to 8 to 12 dollars. The inner barbarians apply plates of the horn to helcomas and ulcerations, and they cut it into bits, which are bound with twine round the limb, like the wooden mpigi or hirizi. Large horns are imported through Bombay to China and Central Asia, where it is said the people convert them into drinking-cups, which sweat if poison be administered in them : thus they act like the Venetian glass of our ancestors, and are as highly prized as that eccentric fruit the coco de mer. The Arabs of Maskat and Yemen cut them into sword-hilts, dagger-hafts, tool-handles, and small boxes for tobacco, and other articles. They greatly prize, and will pay 12 dollars per frasilah for, the spoils of the kobaoba, or long-horned white rhinoceros, which, however, appears no longer to exist in the latitudes westward of Zanzibar island.

Black cattle are seldom driven down from the interior, on account of the length and risk of the journey. It is evident, however, that the trade is capable of extensive development. The price of full-grown bullocks varies, according to the distance from the coast, between 3 and 5 doti ; whilst that of cows is about double. When imported from the mainland ports, 1 dollar per head is paid as an octroi to the government, and about the same sum for passage-money. As Banyans will not allow this traffic to be conducted by their own craft, it is confined to the Moslem population. The island of Zanzibar is supplied with black cattle, chiefly from the Banadir and Madagascar, places beyond the range of this description. The price of bullocks varies from 5 to 8 dollars, and of cows from 6 to 9 dollars. Goats and sheep abound throughout Eastern Africa. The former, which are preferred, cost in the maritime regions from 8 to 10 shukkah merkani ; in Usagara, the most distant province which exports them to Zanzibar, they may be bought for 4 to 6 shukkah per head. The Wasawahili conduct a small trade in this live stock, and sell them upon the island for 4 to 5 dollars per head. From their large profits, however, must be deducted the risk of transport, the price of passage, and the octroi, which is 25 cents per head.

The exceptional expense of man-carriage renders the exportation of hides and horns from the far interior impossible. The former are sold with the animal, and are used for shields, bedding,

saddle-bags, awnings, sandals, and similar minor purposes. Skins, as has been explained, are in some regions almost the only wear; consequently the spoils of a fine goat command, even in far Usukuma, a doti of domestics. The principal wild hides, which, however, rarely find their way to the coast, are those of the rhinoceros—much prized by the Arabs for targes—the lion and the leopard, the giraffe and the buffalo, the zebra and the quagga. Horns are allowed to crumble upon the ground. The island of Zanzibar exports hides and skins, which are principally those of bullocks and goats brought from Brava, Marka, Makdishu, and the Somali country. The korjah or score of the former has risen from 10 to 24 dollars; and the people have learned to mix them with the spoils of wild animals, especially the buffalo. When taken from the animal the hides are pinned down with pegs passed through holes in the edges; thus they dry without shrinking, and become stiff as boards. When thoroughly sun-parched they are put in soak and are pickled in sea-water for forty-eight hours; thus softened, they are again stretched and staked, that they may remain smooth: as they are carelessly removed by the natives, the meat, fat, flippers, ears, and all the parts likely to be corrupted, or to prevent close stowage, are cut off whilst wet. They are again thoroughly sun-dried, the grease which exudes during the operation is scraped off, and they are beaten with sticks to expel the dust. The Hamburg merchants paint their hides with an arsenical mixture, which preserves them during the long months of magazine-storing and sea-voyage. The French and American traders omit this operation, and their hides suffer severely from insects.

Details concerning the growth of cereals in the interior have occurred in the preceding pages. Grain is never exported from the lands lying beyond the maritime regions: yet the disforesting of the island of Zanzibar and the extensive plantations of clove-trees rendering a large importation of cereals necessary to the Arabs, an active business is carried on by Arab dows from the whole of the coast between Tanga and Ngao (Monghou), and during the dear season, after the rains, considerable profits are realised. The corn measures used by the Banyans are as follows:—

2 kubabah (each from 1·25 to 1·50 lbs., in fact, our "quart") = 1 kissaga.

3 kubabah = 1 pishi (in Khuto the pishi = 2 kubabah).

4 kubabah = 1 kayla (equal to 2 man).

24 kayla = 1 frasilah.

60 kayla = 1 jizlah, in Kisawahili mzo.

20 frasilah = 1 kandi (candy).

As usual in these lands, the kubabah or unit is made to be arbitrary; it is divided into two kinds, large and small. The measure is usually a gourd.

The only timber now utilized in commerce is the mukanda'a or red and white mangrove, which supplies the well-known bordi or "Zanzibar rafters." They are the produce of the fluviatile estuaries and the marine lagoons, and attain large dimensions under the influence of potent heat and copious rains. The best is the red variety, which, when thrown upon the shore, stains the sand; it grows on the soft and slimy bank, and anchors itself with ligneous shoots to the shifting soil. The white mangrove, springing from harder ground, dispenses with these supports; it is called mti wa muytu ("wild wood"), and is quickly destroyed by worms. Indeed, all the bordi at Zanzibar begin to fail after the fifth year if exposed to the humid atmosphere; at Maskat it is said they will last nearly a century. The rafter trade is conducted by Arab dows: the crews fell the trees, after paying 2 or 3 dollars in cloth by way of ada or present to the diwan, who permits them to hire labourers. The korjah or score of cut and trimmed red mangrove rafters formerly cost at Zanzibar 1 dollar; the price has now risen to 2 to 3 dollars. This timber finds its way to Aden and the woodless lands of Eastern and Western Arabia; at Jeddah they have been known to fetch 1 dollar each.

The maritime regions also supply a small quantity of the "grenadille wood," called by the people, who confound it with real ebony (*Diospyros ebenus*), abnus and pingú. It is not so brittle as ebony; it is harder than *lignum-vitæ* (*G. officinalis*), spoiling the common saw, and is readily recognised by its weight. As it does not absorb water or grease, it is sent to Europe for the mouth-pieces and flanges of instruments, and for the finer parts of mills. The people use it in the interior for pipe-bowls.

The mpira or caoutchouc-tree (*Ficus elastica*) grows abundantly throughout the maritime regions. A few lumps of the gum were brought to Zanzibar at the request of a merchant, who offered a large sum for a few tons, in the vain hope of stimulating the exploitation of this valuable article. The specimens were not, however, cast in moulds as by the South American Indians; they were full of water, and even fouler than those brought from Madagascar. To develop the trade European supervision would be absolutely necessary during the season for tapping the trees.

A tree growing upon the coast and common in Madagascar produces, when an incision has been made in the bark, a juice inspissating to the consistency of soft soap, and much resembling the Indian "kokam." This "kanya" is eaten by Arabs and Africans, with the idea that it "moistens the body;" in cases of stiff joints, swellings of the extremities, and contractions of the sinews, it is melted over the fire and is rubbed into the skin for a fortnight or three weeks.

The produce and the value of the coco and areca palms have

already been noted. *Orchella-weed* (*Rocilla fuciformis*?), a lichen most valuable in dyeing, is found, according to the late Lieut.-Colonel Hamerton, growing on trees and rocks throughout the maritime regions. The important growths of the interior are the frankincense and bdellium, the coffee and nutmeg—which, however, are still in a wild state—the tamarind, and the sisam or black wood. The largest planks are made of the mtimbati (African teak?) and the mvule; they are now exported from the coast to the island, where they have almost died out. As the art of sawing is unknown, a fine large tree is invariably sacrificed for a single board. It was the opinion of the late Lieutenant-Colonel Hamerton that a saw-mill at the mouth of the Pangani River would, if sanctioned by the local government, be highly remunerative.

Cowries, called by the Arabs *kaure*, in Kisawahili *khete*, and in the interior *simbi*, are collected from various places in the coast-region between Ras Hafun and the Mozambique. This trade is in the hands of Moslem hucksters; the Banyan, who has no objection to the valuable ivory or hippopotamus-tooth, finds his religion averse to the vile spoils of the Cypraea. Cowries are purchased on the mainland by a curious specimen of the "round-trade;" money is not taken, so the article is sold measure for measure of holcus grain. From Zanzibar the cowrie takes two directions. As it forms the currency of the regions north of the "Land of the Moon," and is occasionally demanded as an ornament in Unyamwezi, the return African porters, whose labour costs them nothing, often partly load themselves with the article; the Arab, on the other hand, who seldom visits the northern kingdoms, does not find compensation for portage and rations. The second and principal use of cowries is for exportation to the West African coast, where they are used in currency—50 strings, each of 40 shells, or a total of 2000, representing the dollar.* This, in former days a most lucrative trade, is now nearly ruined. Cowries were purchased at 75 cents per jizlah, which represents from 3 to 3½ sacks, of which much, however, was worthless. The sacks in which they were shipped cost in Zanzibar 1 dollar 44 cents, and fetched in West Africa 8 or 9 dollars. The shells sold at the rate of 80*l.* (60*l.* was the average English price) per ton; thus the profits were estimated at 500 per cent., and a Hamburg house rose, it is said, by this traffic, from 1 to 18 ships, of which 7 were annually engaged in shipping cowries. From 75 cents the price rose to 4 dollars, it even attained a maximum of 10 dollars, the medium being 6 and 7 dollars per jizlah, and the profits necessarily declined.

* The value of cowries is of course infinitely various; that assumed in the text was the usual rate on the West African coast about twenty years ago.

The other articles exported from the coast to Zanzibar are bees'-wax and honey, tortoiseshell and ambergris, ghee, tobacco, the sugar-cane, the wild arrowroot, gums, and fibrous substances; of these many have been noticed, and the remainder are of too trifling a value to deserve attention.

To conclude the subject of commerce in East Africa. It is rather to the merchant than to the missionary that we must look for the regeneration of the country by the development of her resources. The attention of the civilised world, now turned towards this hitherto neglected region, will presently cause slavery to cease; man will not risk his all in petty and passionless feuds undertaken to sell his weaker neighbour; and commerce, which induces mansuetude of manners, will create wants and interests at present unknown. As the remote is gradually drawn nigh, and the difficult becomes accessible, the intercourse of man—strongest instrument of civilisation in the hand of Providence—will raise Africa to that place in the great republic of nations from which she has hitherto been unhappily excluded.

Already a line of steam navigation from the Cape of Good Hope to Aden and the Red Sea, touching at the various important posts upon the mainland and the islands of East Africa, has been proposed. This will be the first step towards material improvement. The preceding pages have, it is believed, convinced the reader that the construction of a tramroad through a country abounding in timber and iron, and where only one pass of any importance presents itself, will be attended with no engineering difficulties. As the land now lies, trade stagnates, loanable capital remains idle, produce is depreciated, and new seats of enterprise are unexplored. The specific for existing evils is to be found in facilitating intercourse between the interior and the coast, and that this will in due season be effected we may no longer doubt.

ITINERARIES.

Zanzibar to Ujiji—continued.

Date.	Stations.	Latitude S.	Longitude E.	Altitude in Feet.
1858.				
Jan. 9	Mbhali ..	0 ° 0' "	0 ° 0' "	..
11	Sengati ..	..	..	..
12	Sorora ..	..	..	..
16	Ukungwe ..	..	..	..
17	Panda ..	..	..	..
18	Kajjanjeri ..	4 42 57	32 5 30	..
21	Usagozi ..	..	..	..
22	Usagozi ..	..	..	..
26	Masenga ..	4 50 16	31 54 30	..
27	Mukozimo ..	..	..	3000
28	Uganza ..	..	..	3188
29	Usenye ..	..	..	..
30	Ukunda ..	5 2 48	31 33 5	..
31	Wanyika ..	5 2 42	31 26 35	..
Feb. 2	Unyanguruwwé ..	5 4 44	31 17 40	..
3	Ugaga ..	..	..	..
4	Mpete ..	5 7 22	31 13 0	..
5	Kinawani ..	5 8 6	31 2 30	..
6	Camp ..	5 8 41	30 52 10	..
7	Jambeho ..	..	..	..
8	Salt Ponds ..	5 5 21	30 44 0	..
9	Camp ..	..	..	..
10	Ruguvu ..	..	..	..
11	Unguwwe ..	..	..	..
12	Camp ..	..	..	..
13	Ukaranga ..	..	..	..
14	UJIZI, on Tanganyika Lake	4 54 56	30 0 0	1844
Mar. 14	Kasenge Island, on Tanganyika Lake ..	5 43 20	29 40 0	..
Apr. 14	Kagunga, on Tanganyika Lake ..	4 30 15	29 56 0	..
15	Wafanya, on Tanganyika Lake ..	4 20 9	29 54 0	..
26	UVIRA (Ivory Mart), on Tanganyika Lake ..	3 24 47	29 33 30	..
May 10	Mzimu, on Tanganyika Lake	4 7 26	29 43 0	..

From Ujiji back to Unyanyembe.

May 6	Camp ..	..	..	..	..
28	Camp ..	..	..	..	..
29	Camp ..	..	..	..	..
30	Camp ..	..	4 54 50	30 28 0	..
31	Camp ..	..	4 58 16	30 41 0	..
June 1	Camp ..	..	5 5 35	30 48 0	..
2	Camp ..	..	..	..	..
3	Camp ..	..	..	..	..
4	Mpete ..	..	..	..	..
5	Ugaga ..	..	..	..	..
6	Wanyika ..	..	..	..	..
7	Wanyika ..	..	..	..	..
8	Usenye ..	..	4 59 46	31 36 20	3188

From Ujiji back to Unyanyembe—continued.

Date.	Stations.	Latitude S.	Longitude E.	Altitude in Feet.				
		°	'	"	°	'	"	
1858.								
June 9	Uvungu	4	56	16	31	49	30	..
10	Uvungu .. .. .. ..	..	..	..	..	..	..	..
11	Usagozi	4	52	46	32	1	0	..
12	Usange	4	49	31	32	13	0	..
14	Unzari	4	46	42	32	23	30	..
15	Mimbi	4	47	27	32	27	0	..
17	Irota .. .. .. ..	..	..	..	..	..	..	4040
18	Yombo	5	0	24	32	34	0	..
19	KAZEH	5	1	3	33	3	0	..

From Kazeh to Lake Nyanza.

July 9	Village	4	46	27	32	1	0	..
11	Ulikampuri	4	36	46	32	58	0	3560
12	Unyambewa	4	30	46	32	56	0	..
13	Unyambewa	4	23	35	32	55	30	..
15	Ibanda	4	14	47	32	54	0	..
16	Ukamba	4	5	35	32	51	0	..
17	Uyombo	3	58	34	32	47	30	3940
18	Ukuni	3	50	19	32	47	0	..
19	Msalala	3	46	24	32	48	0	..
20	Mgogwa	3	42	53	32	48	40	..
22	Senagongo	3	42	1	32	57	0	..
24	Khahama	3	34	16	33	8	15	..
25	Nindo	3	18	31	33	7	40	..
26	Salawe	3	7	22	33	10	30	3818
27	Nera	2	56	0	33	13	0	..
29	Nera	2	52	36	33	17	30	..
30	Urima	2	48	25	33	11	30	3760
31	Urima	2	40	41	33	7	40	..
Aug. 1	Ukumbi	2	30	52	33	7	10	..
2	Isamiru	2	24	39	33	10	0	3740
3	MUANZA, on Nyanza Lake	..	..	..	..	..	..	..
4	Observatory Hill .. .. .. ..	..	..	..	..	..	..	..

From Ugogi to Zungomero.

Dec. 7	Murundusi	6	47	58	36	7	0	..
8	Kinyanguko	6	56	47	36	11	0	..
9	Rodi	6	56	12	36	14	40	..
10	Mporota	6	57	57	36	19	0	..
12	Ikuko .. .. .. ..	..	..	..	..	..	..	..
13	Inena .. .. .. ..	..	..	..	..	..	..	..
14	Ginyindo	7	16	15	36	28	30	..
15	Maroro	7	18	55	36	30	40	..
17	Maroro	7	21	20	36	37	30	..
18	Kiperepeta	7	18	46	36	49	0	..
19	Kisanga .. .. .. ..	..	..	..	..	..	..	..
22	Ruhembe .. .. .. ..	..	..	..	..	..	..	..
23	Camp, Makata .. .. .. ..	..	..	..	..	..	..	..

From Ugogi to Zungomero—continued.

Date.	Stations.	Latitude S.			Longitude E.			Altitude in Feet.
		°	'	"	°	'	"	
1858.		0	'	"	0	'	"	
Dec. 24	Kikobogo	7	21	46	35	58	0	..
25	Mbwiga, Mabruki Pass	7	25	26	37	3	30	..
26	Mbwiga	7	..	..	..	..	..	..
27	Camp	7	29	26	37	10	40	..
28	Kirengwe	7	..	..	..	..	..	..
29	ZUNGOMERO	7	27	9	37	22	9	330

From Zungomero to Konduchi, on the Sea-coast.

1859.								
Jan. 29	Mzegero	7	0	19	38	38	0	..
30	Chya Khenge	6	57	10	38	45	0	..
31	Kisewa	6	52	0	38	55	10	..
Feb. 2	Ruisi	6	45	50	39	10	0	..
3	Konduchi	6	40	24	39	15	30	..

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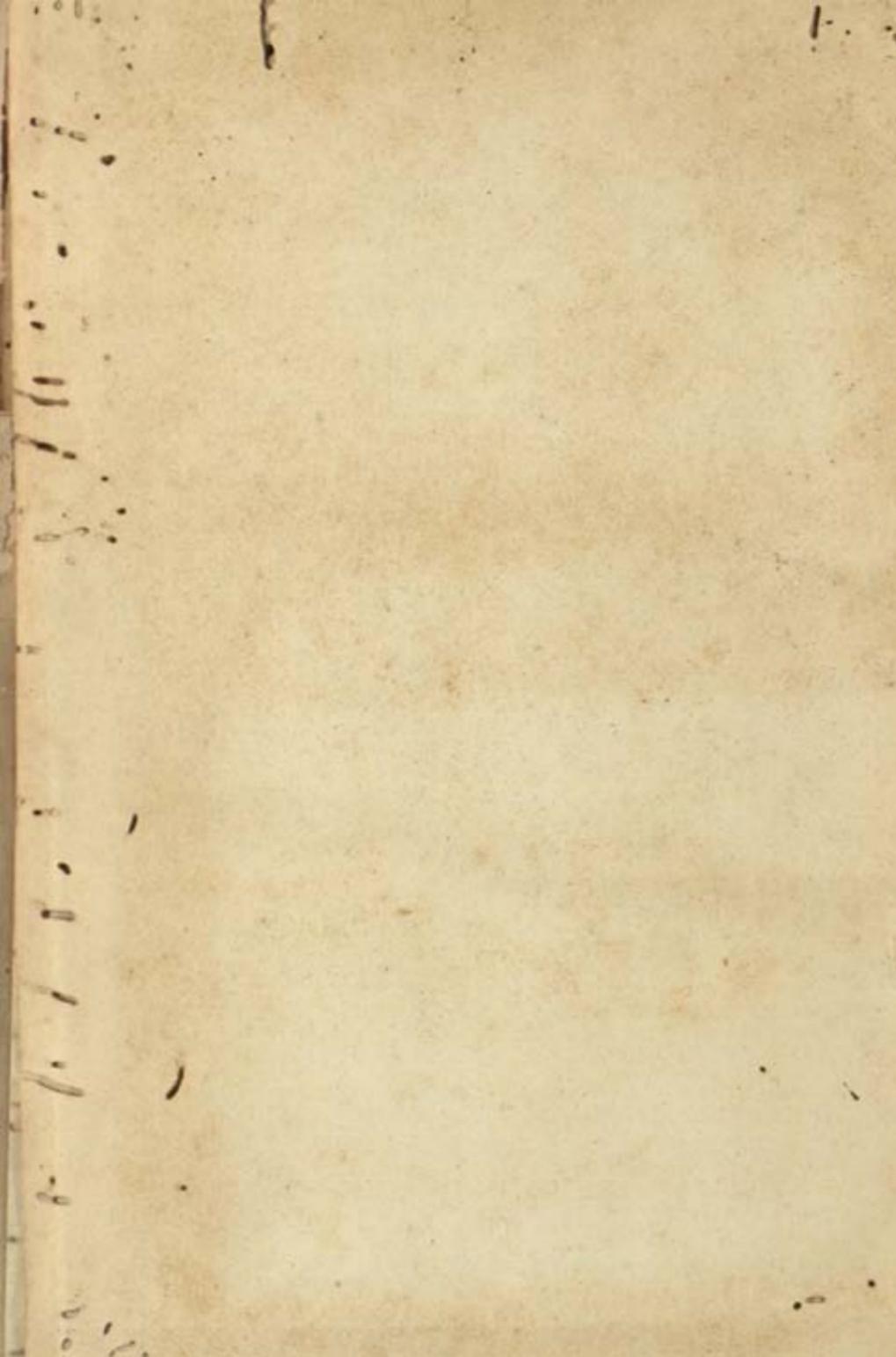
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